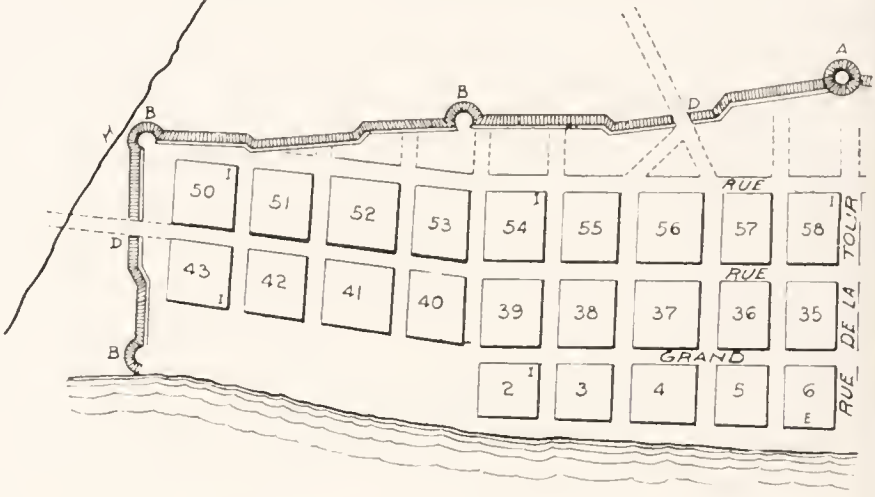
The Evolution of Antiseptic Surgery

Lecture Memoranda
A.M.A. Meeting
St. Louis
1910

SAINT LOUIS

FORTIFIÉ PAR MONSIEUR
LIEUTENANT COLONEL ET
DE LA PARTIE OCCIDENT



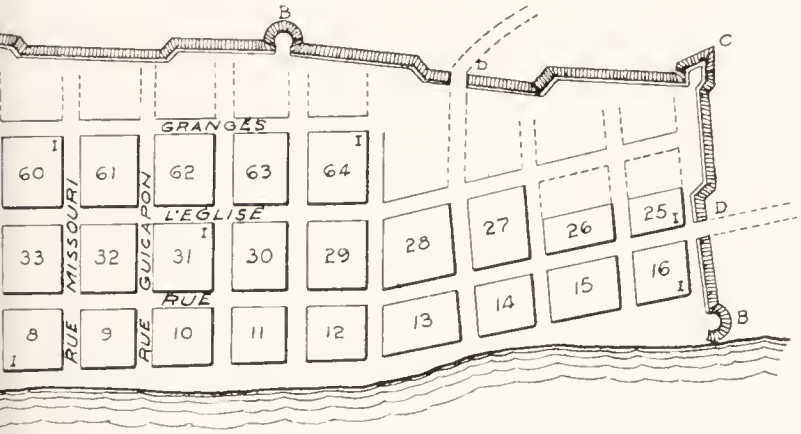
A. LA TOUR B. DEMIS LUNES. C. BASTIONS.
F. EGLISE. G. PLACE. H. PETIT RIVIERE.

NOTA. POUR CE QUICONCERNE LA LIGNE DE FORTIFICATION JE NE L'AITIRE QU'EN 1780 PAR ORDER DE GOUVERNEMENT.

AUG. CHOUTEAU.

DES ILINOIS.

FRANCOIS DE COUSAT.
EUTENANT GOUVERNEUR.
DES ILINOIS. EN 1780.



PORTES. E. GOUVERNEMENT.
EMPLACEMENTS DES PARTICULIERS.

Je certifie que le present est conforme au plan que j'ai fait en 1764 sans être autorisé par le gouvernement, mais seulment comme fondateur de la ditte ville.
ST. LOUIS 1ST SEPT. 1825.

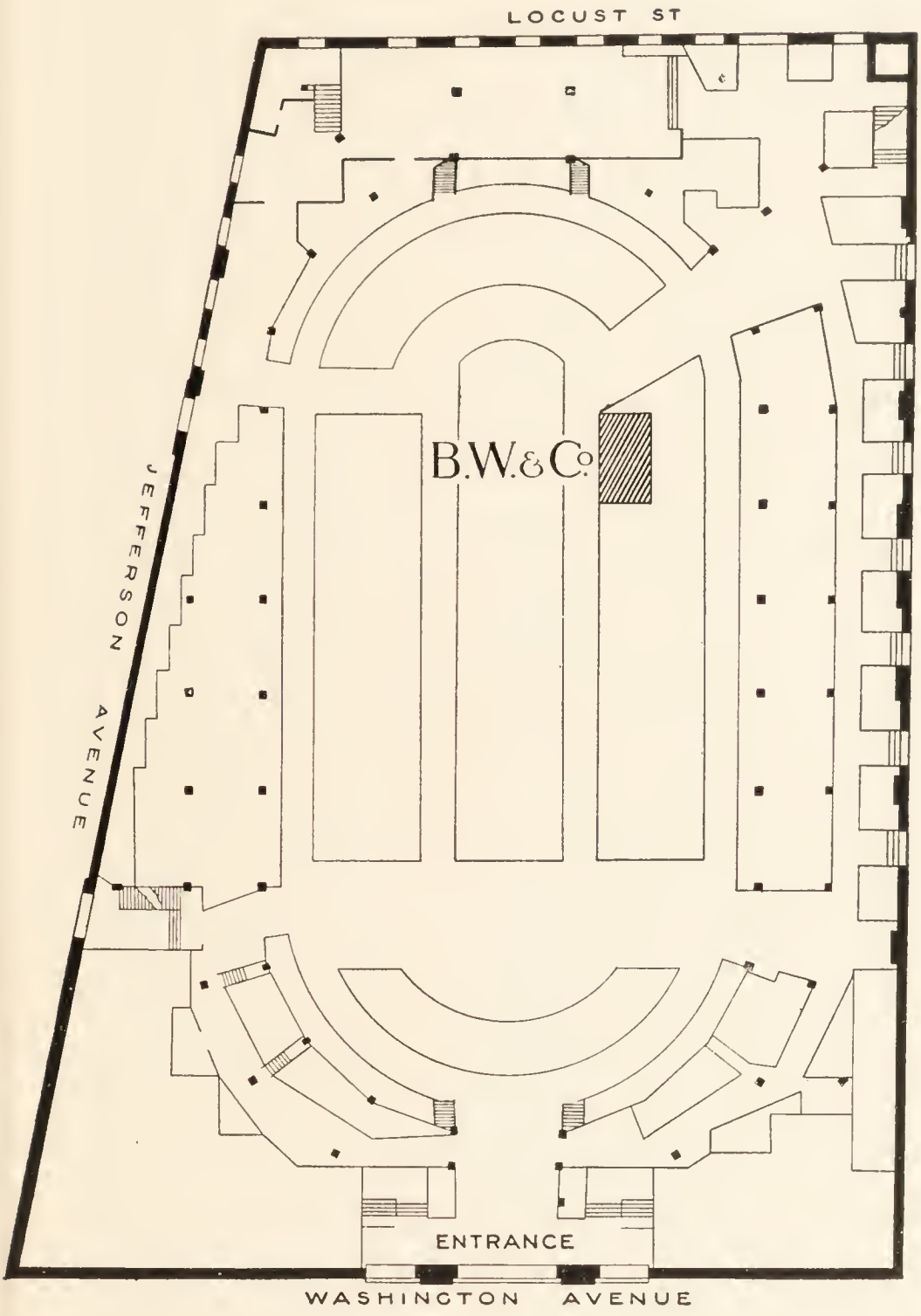
AUG. CHOUTEAU.

IN 1780

SURGEON BANDAGING A PATIENT AFTER AN OPERATION

From an MS. of the XIII century

AMERICAN MEDICAL ASSOCIATION MEETING
ST. LOUIS, 1910



PLAN OF EXHIBITION HALL IN THE COLISEUM, SHOWING POSITION OF B. W. & CO.'S EXHIBIT

American Medical Association Meeting
Coliseum, Washington Avenue. St. Louis, 1910.

Members are specially invited to inspect the Fine Pharmaceutical Products, including a number of interesting additions to Materia Medica, exhibited by Burroughs Wellcome & Co.

The site and position of the exhibit are indicated on the plan on other side of this card.

SECTIONAL INDEX

The Evolution of Antiseptic Surgery

An Historical Sketch

of the use of

Antiseptics from the Earliest Times

Lecture Memoranda

American Medical Association

St. Louis

1910

Burroughs Wellcome & Co.

London (Eng.)

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U.S.A. 213

FOREWORD

FOR many years I have been engaged in researches respecting the early methods employed in the healing arts, amongst both civilised and uncivilised peoples. It has been my object, in particular, to trace the origin of the use of remedial agents. Why were certain substances used in the treatment of various diseases? Was their adoption the result of study and practical observation, or was it more usually the result of accident? Were the alleged virtues purely imaginary and due to some superstitious suggestion? A consideration of such questions is always of interest, and sometimes adds to our knowledge.

There is a considerable amount of information scattered throughout the world in folk-lore, early manuscripts and printed books, but the difficulties of tracing out and sifting the evidence are considerable. I anticipate that the Historical Exhibition of medical, chemical and pharmaceutical objects which I am organising, to be held in London (Eng.), will lead to the revealing of many facts, and the elucidation of many obscure points, in connection with the origins of various medicines.

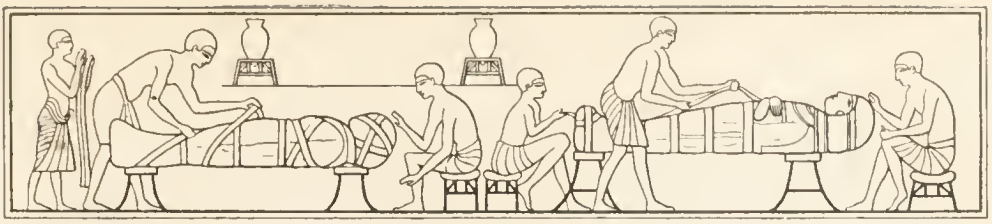
I should greatly value any information sent me in regard to medical traditions or references to antient treatment in manuscripts, printed works, etc.; even though the items be ever so small, they may form important connecting links in the chain of historical evidence.

It is my intention ultimately to place before the profession, in a collected form, all the information I obtain.

HENRY S. WELLCOME

SURGEON OPERATING ON A PATIENT

From an MS. of the XIII century



The Preparation of Mummies. From an Antient Egyptian Tomb

The Evolution of Antiseptic Surgery

An Historical Sketch of the Use of Antiseptics from the Earliest Times

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Synopsis of Chapters

Chapter I

Antiseptics: Natural and Prehistoric

The necessity of preventing putrefaction in dead matter appears to be instinctive among certain animals and insects, and many living things are known to protect themselves by various ingenious methods from destructive septic influences. An instance of this natural instinct may be taken from the life of the bee. Should an intruder, in the form of an insect or moth, make its way into the beehive, it is speedily killed and ejected. Should, however, this be impracticable, owing to its

Natural antiseptic of the bee

Dog Licking a Wound, and an Angel
Applying a Dressing to the Same

From a woodcut of the XV century

position or size, the body of the intruder is impregnated with, and preserved by, the formic acid secretion of the sting, and putrefaction thereby prevented. It is then methodically and hermetically enclosed in a sepulchre of wax, so that, it being excluded from the air, the bees in the hive are protected from septic influences.

Naturalists also tell us, that when dealing with snails that have made their way into the hive, the bee is content to seal up with wax the orifice of the shell, and so utilise the intruder's equipment as its own tomb. As we shall see later on, man apparently borrowed this idea of preserving bodies from putrefaction from the bee, for we find that honey was used by the Greeks to protect the body from decay, and was also employed by them as a dressing for wounds.

In connection with the poisonous products of putrefaction, it is a curious fact that certain birds of prey, like the vulture, appear to be immune from their evil effects, and can eat with impunity large quantities of diseased and putrefied animal tissue.

The surgical instinct of birds

Other birds appear to possess a remarkable instinct for surgery, which is even accompanied by a natural antiseptic treatment. Expert naturalists have observed that the woodcock and partridge are able to dress their own wounds with considerable skill. It was noticed in the case of several woodcock which were shot, that they were recovering from wounds which had been previously received. In every case the injury was found to be neatly dressed with soft down plucked from the stems of feathers, and skilfully arranged over the wound, evidently by the aid of the long beak of the bird. In other cases, it was observed that ligatures had been applied to wounded or broken limbs. Certain animals, when wounded, have been known to burrow into the earth or mud, and so shield the wounded part from the air.

It is a matter of common knowledge that an animal, when wounded, will immediately commence to lick

ÆSCULAPIUS

Hygeia feeding one of the Sacred Serpents of Æsculapius

the cut or laceration, and often, without other care, such wounds heal in a remarkably short space of time. By the act of licking, the wound is cleansed, and it is quite probable that, owing to the salts in solution in saliva acting as a natural antiseptic, the frequent application of the tongue assists the healing of the wound. Curiously enough, this natural method of healing was perpetuated in the temple of Æsculapius at Epidaurus, in Antient Greece, where the sick and suffering who came to be healed had their wounds and sores licked by the sacred serpents which were kept for that purpose. These serpents, which were of a harmless variety found in the valley of the Hieron, are said to have been trained to lick with their forked tongues the ailing part. Æsculapius, the deity himself, was supposed sometimes to appear in the form of a serpent, and was generally represented with a staff around which a serpent is entwined, an emblem which is still recognised as pertaining to the healing art.

Animal instincts in healing wounds

The serpent as a medical symbol

Antient Egyptians Preserving Fish by Salting and Drying

CHAPTER II

Antiseptics in the Early Ages

Although man appears to have been more backward than the lower animal creation in recognising the danger that menaced him from the putrefaction of matter, we find that philosophers and seers from the earliest times have speculated as to the cause, and attempted to solve the mysteries of the natural processes attending decay. When these early observers saw, that after a while dead matter became alive with minute animals, they concluded that there was a re-conversion of dead into the living. The decay of one body was but the generation of another. Thus they eventually arrived at the belief, that the living forms were but the adaptations of the elements of dead matter, and that even rats and snakes were created spontaneously from the earth.

Man's first theories on putrefaction

It is probable that the first occasion that suggested to primitive man the necessity of preventing decay, arose from the desire to preserve animal tissue for food. The earliest method probably employed by him for this purpose was the simple and primitive process of drying. He doubtless found from experience that, if this was completely carried out, it prevented the ordinary putrefactive changes taking place. In hot and dry countries this method seems to have been extensively practised from the earliest times, and in this way the prehistoric inhabitants of Egypt originally preserved the bodies of their dead.

Earliest methods of preserving employed by man

Smoking was also employed as a preservative in the Early Ages, and has survived to the present day as a method for curing fish, pork, and other animal substances. The preservative properties of smoking, as now practised, are well known to be due to the antiseptic action of the creosote present in the smoke from the wood which is employed in the process.

Smoking as a preservative

EARLY GOTHS CATCHING FISH AND PRESERVING THEM BY SMOKING

Refrigeration, by means of which animal matter, when kept at a low temperature, is enabled to resist putrefaction, and which is now so largely employed in the importation of meat, is but an adaptation of Nature's processes. This is clearly illustrated by the carcases of long extinct mammoths which have been discovered in the ice cliffs of Siberia with flesh still upon them.

The antiquity of salting as a preservative

The preservation of animal matter by natural salts, such as the chlorides and nitrates of sodium, has, with little doubt, been employed from the Early Ages. The preservation of fish in this manner was practised in antient times by the Egyptians, and also by the early races inhabiting Scandinavia and the north of Europe.

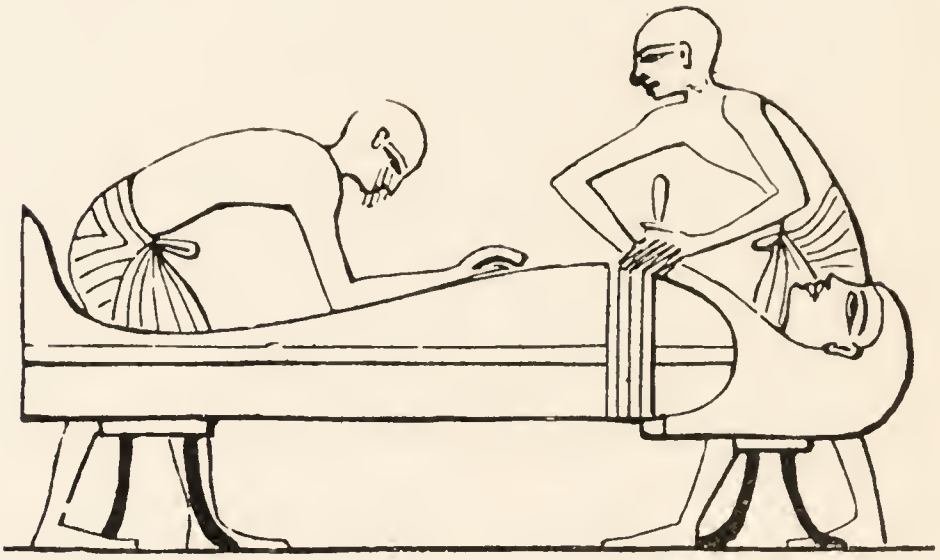
Earliest method of embalming

The custom of embalming, or preserving the human body from decomposition, goes back to a period of great antiquity. The method employed by the Egyptians in prehistoric times is said to have been carried out by first slowly drying the body and then washing it with a strong solution of natron, the natural carbonate of sodium found in Egypt.

Antient Egyptian methods of embalming

At a later period, a more elaborate process of embalming came into vogue, which was performed by means of the insertion of certain oils, gums and resins into the cavity of the body, after the moister portions had been removed. Finally, the body was washed with oil of cedar and natron. Another method of embalming, practised by the Egyptians, was carried out as follows: the brain and intestines were first removed, after which the abdomen was washed clean with palm wine and then filled with myrrh, cassia and other aromatic gums and gum resins. The body was then soaked for seventy days in a solution of natron, and was finally bandaged with gummed linen or cloth. In some processes a liquid distillate of pitch-pine was used, also tar, bitumen and asphalt. It should

be noted that practically all the substances employed by the early Egyptians in their processes of embalming possessed antiseptic properties to a greater or lesser extent.



ANTIENT EGYPTIANS EMBALMING A BODY

The early Ethiopians used a diaphanous resin to preserve the bodies of their dead from putrefaction, whilst the Persians enveloped theirs in wax.

From a recent investigation carried out at the Government School of Medicine in Cairo, it is stated on scientific evidence, that the early Egyptians simply pickled the bodies of their dead in brine, and that the various aromatic balsams and resins employed were mainly accessories to the process. The real agent at work was the extraordinarily dry climate of the country.

Recent light on Egyptian methods of embalming

It has been calculated that in Egypt alone seven million bodies were embalmed, yet the idea of applying the principle of preventing putrefaction in other ways never seems to have occurred to the peoples of the early civilisations.

About the third or fourth century before the Christian era, honey appears to have been largely employed for preserving the bodies of the dead from putrefaction. Columella speaks of the pro-

perties of honey in preserving bodies for several years, while Lucretius also refers to its power of preventing decay. Josephus records, that the Jewish king Aristobulus, whom Pompey's partisans destroyed by poison, lay buried in honey till Anthony sent him to the royal cemetery in Judæa. The Assyrians are also stated to have placed the bodies of their dead in honey to preserve them from corruption. Abd'Allatif relates a story of "a man who had found a large sealed cruise, and having opened it, he discovered it to contain honey, which he began to eat, until one of his companions observed a hair upon his finger. When the contents of the vessel were more closely examined, the body of a little child, quite perfect, was withdrawn from it. The body was well preserved and decorated with rich jewels and ornaments." The dead body of Alexander the Great was rubbed and embalmed with honey, and the practice of using honey for embalming purposes seems to have been common amongst Romans of the higher class. Virgil alludes to the practice in the following lines:—

The employment of honey in embalming

> Grant the corse torn by ravening fangs a curse,
> Is hence no ill in funeral flames to burn;
> Or, pent in cold obstruction, stiffening lie
> Immers'd in *honey*, while entombed in stone.

Wax also appears to have been extensively employed at this period for preserving the dead from putrefaction. The body of King Agesilaus was thus preserved during its conveyance from Sparta to Lacedemon for burial. This story is confirmed by Cornelius Nepos and also by Plutarch, who ascribed the adoption of wax to the want of honey for this purpose. It can be readily conceived how the coating of a body with wax under certain conditions would hermetically seal the dead tissue and keep it from contact with the air, and so prevent for a time the process of putrefaction taking place.

The use of wax in embalming

The Guanches, the aboriginal inhabitants of the Canaries, practised a method of embalming similar to that of the Egyptians.

The method which they employed is described by an antient Spanish writer as follows: "They carried the dead body in a ease, stretched it out on a flat stone, opened it and took out the bowels; then twice a day they washed the porous parts of the body, namely, behind the armpits, behind the ears, the groin, between the fingers and the neck, with eold water. After sufficient washing, they anointed those parts with sheep's butter, and sprinkled them with a powder made of the dust of deeayed pine trees, and a sort of brushwood which the Spaniards called 'Bressos,' together with the powder of pumice stone; then they let the body remain until it was perfeetly dry, when the relatives eame and swathed it in dressed goat-skins, girding all tight with thongs of leather. The body was finally plaeed in a eave. In some eases amongst the Guanehes, the eavities of the body, after being washed with salt water, were made to reeeive aromatie substances, and the whole body was then dried in the sun or in air artifieially heated."

The body of King Edward I. ("Longshanks") was embalmed, in 1307, and the bill for medical attendanee and embalming the body, which is not without interest, is still extant. The following items in the aeeount relate to the embalming:—

	£	s.	d.
"Pro emplastris cironeis	4	0	0
Item pro terebintine destillato ...	0	40	0
Item pro uno emplastro pro collo Regis eum ladano et ambras orientalis	0	60	0
Item pro vj malis granates	0	60	0
Item pro sex unciis de balsamo ad eorpus Domini Regis unguendes	13	0	0
Item pro pulveri aromatice de aloeis thuris myrrhæ ad ponendem in eorpore Regis	4	0	0
Item pro musco uncia iij ad ponendum in membris Regis (a) ...	0	60	0

The embalmers, Master Nicolas, of Tynwyeke (who, the King said, "was more learned and fit to have the

care of his health than anyone in the realm"), Master Peter, the surgeon, and Richard of Montpellier, the Espicer or apothecary, did their work well, for, in the early days of the present century the tomb of Edward I. was opened, and the body found entire. An antiquarian enthusiast was induced to taste the "pickle" in which the royal remains were preserved, and even then, more than 500 years after the embalmment, it is said to have showed traces of the spices used, which are set forth in the account quoted.

Antient Hebrew antiseptics

Little can be gathered from the Old Testament as to the Hebrew method of treating wounds, but judging from the strictness of the hygienic measures enforced by Moses, the Jews recognised the danger that might arise from septicæmia and infection. According to the Levitic law, "the woman who gives birth to a male child shall be impure for seven days; if she gives birth to a girl, she shall be impure for two weeks." Among the substances ordered to be used in the process of purification were cedar, hyssop, and spring water, all of which possess certain antiseptic properties.

Early Hindu antiseptics

Sushruta, the Hindu father of surgery, in one of his works, advises that certain incense of aromatic drugs should be kept burning in the room in which an operation is being performed, with the presumed object of purifying the air.

MACHAON ATTENDING A WOUNDED WARRIOR

CHAPTER III

Antiseptic Methods in the Grecian and Roman Periods

Coming to the Grecian period and the methods the Greeks employed in the treatment of wounds, Virgil describes how Diana, moved with pity at the sight of the sufferings of the son of Theseus, who was torn by his own horses, healed his wounds by the aid of certain medicinal plants. In the Georgics, he again alludes to the healing virtue of plants, and tells us how Japis, when tending Æneas, who had been wounded by an arrow, "squeezed into the wound the juice of certain useful herbs." Machaon, one of the sons of Æsculapius, is said by Homer to have accompanied the army of Nestor. Although he took his place in the ranks with other warriors, he acted as military surgeon to the troops. The poet goes on to relate that when Menelaus was wounded in the leg, Machaon was sent for. He hastened to the stricken soldier, and withdrew the arrow from the wound. He sucked it and applied a softening ointment, the recipe for which Æsculapius had received from the hand of Chiron. Machaon is also said to have healed Philoctetes of a foul ulcer by cutting out the wound, washing it with wine, and applying herbs of healing. The good effect of the wine was doubtless due to the antiseptic properties of the alcohol it contained. In the Iliad, an account is given of another battle, in which Machaon himself was wounded, and Polydorus, his brother, being engaged in fighting, Patrocles acted as surgeon and attended to Eurypylus, who was wounded by an arrow in the thigh. His method of treating the wound is thus described: he washed off the blood with lukewarm water, and took some bitter root, crushed it in his hand, and applied it to the wound; the blood stopped immediately and the pain ceased.

Antiseptics in Greek mythology

Wound treatment of Machaon, son of Æsculapius

From this account, it appears that the antient Greeks were acquainted with some vegetable anodyne styptic which could be applied on the battlefield.

Greek Army Surgeon Dressing the Wounds of a Soldier

Hippocrates, the father of Greek medicine (460 B.C.), in his work on wounds, observes that the surgeon should aim at keeping the wound dry, that condition being a healthier one than when it is wet. He recommends that wounds should be permitted to bleed freely, and should be carefully cleansed. He was against the use of fatty substances as dressings, and advocated astringents, such as wine, alum dissolved in vinegar, galls, and the green bark of the fig-tree. He directs another dressing to be prepared by placing sour grapes in a vase of red copper in the sun, and adding honey, myrrh, nitre, and a small quantity of turpentine, thereby making an application which would possess undoubted antiseptic properties. In discoursing on wounds of the head, he states a head wound should never be moistened with anything, not even with wine, and alludes also to a black medicament, which is soluble, with which a wound might be anointed, and afterwards a piece of linen, moistened with oil, applied. To cure long-standing wounds, he recommends the employment of unfermented wine, to be used perseveringly, or astringent red or white wine.

Antiseptics employed by Hippocrates

Pitch and other tarry substances, having antiseptic properties, were also employed by the surgeons of early Greece in the treatment of wounds, and Pliny mentions how valuable were the absorbent properties of certain earths when used for the same purpose.

The antiquity of the use of oil and wine as a dressing for wounds is evidenced by the parable of the Good Samaritan, related in the New Testament. In pouring oil and wine on the wounds of the man, who was waylaid by robbers, the Samaritan was probably using the method of first-aid practised by his countrymen, which, unknown to them, was a mild form of antiseptic treatment.

Oil and wine as a dressing for wounds

Celsus, who lived about A.D. 50, gives us a glimpse of the methods of healing wounds employed by the Roman surgeons. Following the teaching of the

THE GOOD SAMARITAN

Greeks, they first carefully cleansed the part by washing it with wine, vinegar, or oil. In other cases, honey was applied, or wool dipped in vinegar, and to arrest hæmorrhage, the wound was cauterised by means of a red-hot instrument. In a work on the second Punic war, by Silus Italicus, a surgeon who was present with the army of Hannibal, he mentions that wounds were cured with the juice of herbs and charms. The Romans were also acquainted with the properties of certain earths of a calcareous nature, which they used as an application to wounds.

Paulus Æginetus, who flourished about the seventh century, advocated astringent applications, such as fir-cones macerated in wine, as a dressing for wounds.

Galen, the famous Greek physician and anatomist, who flourished A.D. 200, employed as wound dressings, alum dissolved in wine, lime water and astringent herbs. Writing on alexipharmic dressings for wounds, he states, that they only take effect when they are contrary to the cause of the disease, so that according to the nature of the deleterious or venomous substance, a heating or refreshing remedy should be applied. Honey, hydromel, verdigris, turpentine, and oil were among the substances also recommended by Galen to be used in dressing wounds; but, before their application, he insisted that the wound which was putrid should be washed with wine. Another method he advocated was the application of a sponge or piece of wool, soaked in astringent wine, or a mixture of water and vinegar to the wound. For suppressing hæmorrhage, when cold water and astringents failed, he employed unripe galls and stronger wines.

Wound treatment in the Roman period

Oribasius, another celebrated surgeon of the fourth century, followed the doctrines of Hippocrates, and strongly advocated the use of wine or vinegar, diluted with water, as an application to wounds. In some cases, he states he found that the leaves of the papyrus plant, which had previously been soaked in wine, were of great value in arresting hæmorrhage, and

thus he unconsciously devised a mild antiseptic plaster.

Rhases, the Arab, who lived between the years 850 and 923, and was probably the first to obtain alcohol by distillation of wine, employed it in the treatment of wounds, alone, or mixed with astringent plants.

A Soldier of Antient Greece having wounded Foot Dressed

From a bronze ca. 250 B.C.

CHAPTER IV

Antiseptic Methods in Mediæval Times

In the early Middle Ages the teaching of the Greeks drifted southward, and the Arabian School added considerably to the knowledge of the period. Albucasis, the Arabian physician (A.D. 936–1013), in his treatise on surgery, recommends that a pad of cotton wool, soaked in rose oil alone, or mixed with an astringent wine, should be placed on a wound. "If the wound," he continues, "is found to be affected by the *action of the air*, an ointment should be applied until suppuration occurs." The fact that Albucasis in the eleventh century recognised the evil of exposing a wound to the air is very remarkable, and he may be fairly regarded as one of the earliest pioneers of what is known as aseptic surgery to-day.

Albucasis, the Arabian, observes the effect of the air on a wound

The methods of the Arabian surgeons and those who graduated at the School of Salerno were followed by Avicenna, Avenzoar, Averröes, and other famous surgeons of antiquity. The chief substances advocated by the School of Salerno for dressing wounds were aloes, centaury, galls, fennel flowers and other astringents, some of which remained in use for this purpose as late as the eighteenth century.

Wound dressing used at the School of Salerno

Another substance introduced by the Arab surgeons as a dressing for wounds, and which was employed for centuries afterwards in other countries, was the astringent gum-resin, called "dragon's blood." The origin of its use for arresting hæmorrhage was probably due to its colour, as, according to the old doctrine of signatures, substances of the same colour or shape as organs of the body, or its secretions, had a beneficial effect upon them.

From what is known of surgical treatment in Anglo-Saxon times, astringent substances, such as powdered galls, or the crushed leaves of some herb possessing styptic properties, were generally applied to a wound to arrest hæmorrhage. The treatment

for wounds employed by the Anglo-Saxon leeches may be judged from the following recipes taken from an Anglo-Saxon leech book, written about the seventh century:—

1. "A wound salve: take seed of waybread, bray it small, shed it on the wound; soon it will be better."

ALBUCASIS PERFORMING AN OPERATION
From an MS. of the XIII century

2. "For cleansing of a wound: take clean honey, warm it at the fire, put it then into a clean vessel, add salt, and shake it till it have the thickness of brewit, smear the wound therewith, when it turneth foul. If there be a bone breach in the head, pound maythe and goutweed well in honey, then add butter; that is a good salve."

3. "Again, a wound salve: the groundsel which

waxeth in highways, that is good for a wound salve, and ribwort, and yarrow and gith ripe; pound all the worts, boil in butter, and squeeze through a cloth."

Anglo-Saxon wound dressings

It is curious to note how, even in a country so far removed from Grecian influence as Anglia, we find honey being used as a dressing for wounds.

From Anglo-Saxon times to the twelfth century was the darkest period in the history of surgery, and, if anything, the art retrograded rather than progressed. Towards the close of the thirteenth century, however, Theodoric, Bishop of Cervia, near Ravenna, who was learned in surgery, gave voice to principles that eventually laid the foundation of aseptic surgery.

For centuries previous it had been believed and taught that the best method of treating a wound was to promote suppuration, and that every method should be used to keep it open, but Theodoric, writing in 1275, says: "It is not necessary, as Roger and Roland have written, and as many of their disciples teach, and as all modern surgeons profess, that pus should be generated in wounds. No error can be greater than this. Such a practice is indeed to hinder nature, to prolong the disease, and to prevent the conglutination and consolidation of the wound."

Theodoric in 1275 recognises the principles on which aseptic surgery is founded

Unfortunately Theodoric's theory was not believed, and the advocates of suppuration triumphed: for centuries afterwards, poultices and fats of various descriptions continued to be applied to wounds, and tents plastered with irritants to promote suppuration thrust into them, even when there was no foreign matter to be discharged.

The method of treating a wound practised by Theodoric and Henry of Mondeville, his pupil, was to wash it with wine only, scrupulously removing every foreign particle, and then bringing the edges together, and so excluding any form of dressing.

The favourite dressing of William of Saliceto, a physician who lived in the thirteenth century, was

a mixture of rose oil and the whites of eggs, which he applied to the wound by means of feathers.

Lanfranc's method of wound treatment

Lanfranc, the French surgeon, in 1265 improved on William's method of treatment, and observes that "a wound that will not close up by itself must be stitched with a needle through which a thread can pass. The wound should then be covered with the astringent powder of dragon's blood, taking care that it does not reach the inside of the wound, where it could prevent consolidation. Over this a linen cloth soaked in a mixture of rose oil and white of egg should be placed, and over this a bandage."

The invention of firearms as weapons of war, about the middle of the thirteenth century, opened up a new field for surgeons in the treatment of gunshot wounds. From contemporary writers we learn, that at the close of the fourteenth century their methods of treatment were still very crude. They believed that gunpowder was a burning irritating substance that poisoned the wound, and relied on the application of warm hemp-seed oil to counteract its harmful effects. Nicolaus, a German, who was barber-surgeon to the Duke Sigismund of Austria, was the first to introduce hemp-seed oil as a dressing for wounds. Gersdorff, an Alsatian surgeon, advocated pouring the oil into the wound, and insisted that it should be used two or three times in succession by pouring it out and filling the wound again. After this had been done, he substituted for the oil an infusion of the inner bark of the linden and elder blossoms, after which he applied drawing plasters.

Early methods of dressing gunshot wounds

Guy de Chauliac advocates the use of hot red wine

Guy de Chauliac, the great French surgeon of the fourteenth century, advocated the use of hot red wine to wash out a wound. After drying, he proceeded to dress it with a lenative ointment, over which he placed a bandage that had been soaked in wine and then squeezed. Around, but not on the wound itself, he

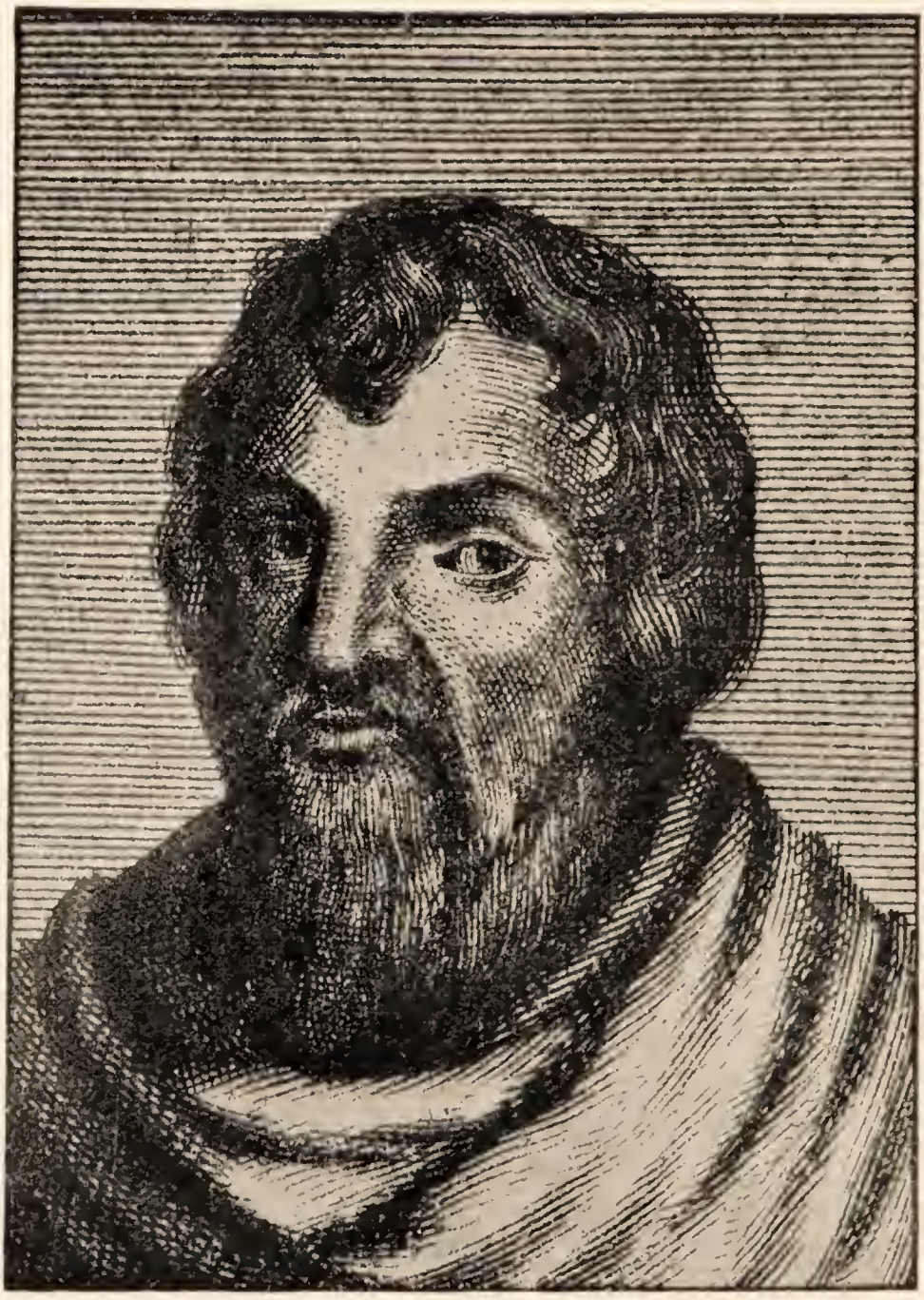
applied oil of rose and oil of myrtle mixed, or an application composed of oil and vinegar.

From the time of Guy de Chauliac, greater attention was paid to the treatment of wounds, judging from the writings of surgeons of the period. In them we find many new terms, such as "corrosive," "putrefactive" and "regenerative," frequently employed in connection with wound treatment. Such terms indicated a tendency towards a more scientific research and methodical study of the subject. Towards the middle of the century a remarkable paragraph occurs in a work by Arnauld de Villeneuve, a mediæval physician and alchymist, which apparently foreshadows the brilliant discoveries that were made centuries after his time. Writing on the means by which the healing of wounds is effected, he states: "sometimes washing is necessary. And such washing ought to be done with lukewarm drying agents, such as with wine or aqua vini (aqua ardenti). That such a washing ought to be dry has already been stated, for wounds are not cured unless previously dried. Wounds recently received, when they are washed with aqua ardenti, heal most speedily, because the liquid cleanses and dries and also *removes any harmful combination introduced from the air*."

Arnauld de Villeneuve uses alcohol as a wound dressing, and recognises a harmful combination introduced from the air

A very general belief prevailed in mediæval times in the preventive and antiseptic powers of certain plants possessing powerful odours. The fresh or dried plants were exposed so that their odours were diffused in the air, or they were burnt in such a way that the smoke pervaded the atmosphere, a practice which was but recently maintained by the strewing of fragrant herbs in the dock on the first day of the opening of the Criminal Sessions at the Old Bailey. Occasionally, also, preparations of the plants were taken internally as medicines, whilst the dried herbs were frequently made up into "pomanders," or scent balls, to be carried about the person, or small scent-bottles were filled with the powdered herbs.

Antiseptic properties of plants



Arnauld de Villeneuve

Physician and Alchymist

Born about 1240. Died 1313

A fourteenth century "drynke for the pestilence" contained fever-few, mugwort, maythe (stinking mayweed), and other strong-smelling plants mixed with old ale. The writer of the book, in which the recipe appears, quaintly states that, "gif the seke drynke VI sponful at ones, it schal distroye the corupcion, and cauen the man or wumman, whethin it be." Ointments for cleansing and healing wounds contained vervain, resin, and mastic, whilst frankincense was mixed with wine as a lotion. A disinfecting powder for wounds, called "recheles," was a kind of incense; it was used for toothache, and as an ingredient in "a goud poudre for to slo the festour." Sage and salt, baked into cakes and powdered, formed a tooth powder. A sixteenth-century preventive of plague was a sponge dipped into vinegar and rose-water. or vinegar in which wormwood and rue had been boiled; the sponge was to be "smelled often." Later still, pomanders were made containing cinnamon, cloves, amber, nutmegs, storax, chamomile, juniper and red roses, beaten together to make a powder which was then made into a mass with rose-water. A preventive remedy for internal use, consisting of sage, honey and treacle was to be taken fasting, five or six spoonfuls daily. Rue, elder, red sage, white wine and ginger were the ingredients of another mixture, of which a good draught was to be taken every morning and evening, for the space of nine days. Finally, fumigations were resorted to in order to destroy the supposed "aura," or poison of the plague, for which purpose it was recommended that "such things ought to be used as exhale very subtile sulphurs, as the spicy drugs and gums." In the category referred to, were included storax, benzoin, frankincense and all aromatic roots, woods, etc., and it was asserted that "such drugs as are from a vegetable production and abound with subtile volatile parts, are of service to be exhaled into the air this way, both by their fitness to join with and cover those venomous *spicula that are on float*."

Pomanders and their use

SURGEON ATTENDING TO A WOUND ON A PATIENT'S LEG

From a woodcut of the XV century

A celebrated ointment which enjoyed a great reputation in the Middle Ages as a dressing for all kinds of wounds was called "Egyptian ointment." It was composed of honey, 1 lb.; vinegar, ½ lb.; sulphate of copper, ½ oz.; and alum, ½ oz. The name of the originator of this formula is unknown, but as a dressing it undoubtedly possessed antiseptic properties, and must to some extent have justified its reputation. It is said to have proved to have been the most effective weapon against putrefaction, and as late as the eighteenth century, Bordenave, a French investigator and surgeon, states that he used it with success to restrict to a certain point putrefaction which threatened a whole limb.

Egyptian ointment

Braunschwig, a German surgeon (1497), was another who regarded gunpowder as a poison, and recommended, in order to neutralize its evil effects, that warm oil of violets should be poured into the wound. He also advocates camphor and oil of turpentine as local dressings, and recommends that wounds should be kept open by means of tents, rubbed with pork fat.

Braunschwig's method of treating wounds

Little progress was made in surgical treatment until the end of the fifteenth century. The surgeon of that period still relied on the red-hot cautery to arrest the flow of blood, and then dressed the wound with an ointment composed probably of dried earthworms in powder, Armenian bole, camphor and oil of roses. He might, indeed, have also inserted a drainage tube of reed or animal membrane, such as the windpipe of a rabbit.

The mortality from hæmorrhage on the battlefields and in operations at this period must have been terrible, for the boiling pitch, or oil, the red-hot iron, the styptic pellets, and other primitive methods of arresting blood were quite inadequate, and must at times even have accelerated death.

During the sixteenth century, the idea that air had some effect on wounds seems to have suggested itself to several surgeons. Fallopius states that he studied the action of air on wounds, and tried its effects.

In 1563, Felix Wuertz, a Swiss surgeon, advocated a new treatment for wounds, and to stop hæmorrhage he

APPLICATION OF THE ACTUAL CAUTERY TO A WOUND

From a woodcut of the XVI century

used crocus martis (oxide of iron), alum, and the white hair of the rabbit. He strongly opposed the use of the cautery as aggravating the pain, and deprecated the use of salves and dirty oils, in place of which he strongly recommended honey as the best local application. He also went so far as to say that "*the influence of air on wounds was dangerous, provoking irritation and cramp.*" He advised that

Wuertz advises that wounds should be dressed quickly, and not exposed to the air

"*dressings should be made as quickly as possible, taking care to shut all doors and windows, to prevent the action of the air.*"

In a treatise on surgery written by Duchene towards the close of the sixteenth century there are some very original and remarkable statements with respect to the treatment of wounds. He says, "I think it worth mentioning, that many use, not only for the first dressing, but throughout the entire treatment of the wounds, simply tepid spring water, to which some add a little oil and vinegar. They wash the wound with it, and lay upon it wet lint or tow, and so successful is the result that people are astonished, and believe it is the result of a charm of magic words."

Duchene records some remarkable observations

He advocated that a little oil and vinegar should be added to the water, "for," he states, "it is clear that vinegar resists corruption, for the reason that if something is put in it, it is conserved and will not putrefy. Oil acts in the same way, and if poured on wine or other liquor it prevents it turning sour *by preventing the air coming to it.*"

It must be readily acknowledged that these observations, which were made in 1576, practically outlined the principles which Lister brought into prominence three hundred years later.

John Vigo, the author of one of the most popular works on surgery in the sixteenth century, followed the antient custom of cauterising wounds with boiling oil.

Ambroise Paré, the father of French surgery, is said to have been the first to put a stop to the terrible treatment of arresting hæmorrhage with boiling oil. The story is told that once, after a certain battle, Paré found that, to his horror, no more boiling oil was available for the surgeons, and that he would be obliged to resort to some other method of treatment.

"At last," he states, "I was forced instead thereof to apply a mixture of the yolks of eggs, oil of roses and turpentine, a mixture which produced such excellent results that I resolved never more to burn thus cruelly

AMBROISE PARÉ

Father of French Surgery

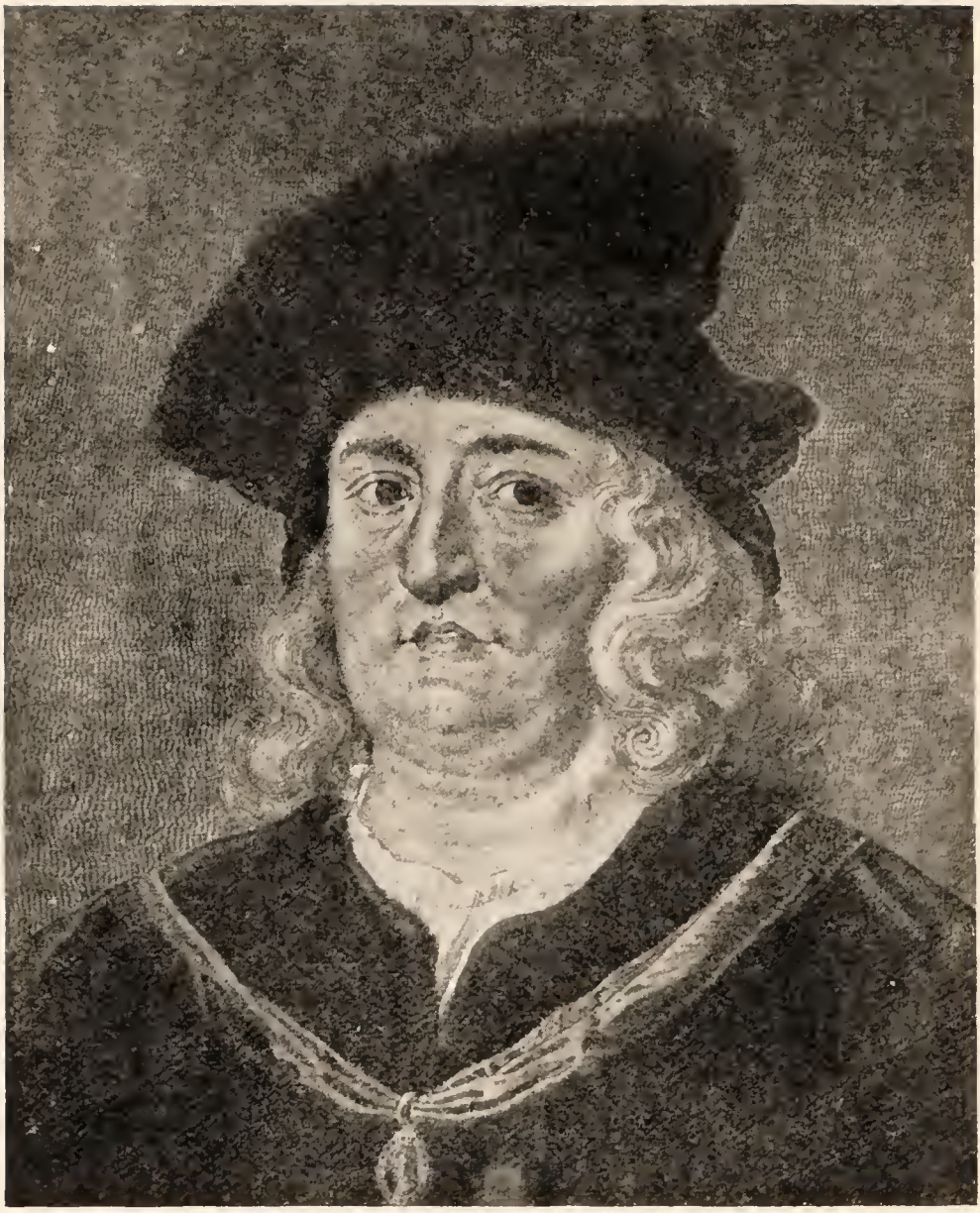
Born 1517 Died 1590

poor men with gunshot wounds." The usual dressing consisted of oil of elders mixed with treacle. Paré mentions how once he visited, at Turin, a surgeon who had invented a famous balm for dressing gunshot wounds. He states "he made me pay court to him for two years before I could possibly draw the recipe form him. In the end, thanks to my gifts and presents, he gave it to me, which was to boil in oil of lilies, young whelps just born, and earthworms, prepared with Venetian turpentine. Then I was joyful, and my heart made glad that I had understood his remedy, which was like that which I had obtained by chance." Paré experimented with other dressings, and in his works he advises the following treatment for a suppurating thigh: "The thigh and the whole of the leg must be fomented with a decoction of sage and rosemary, thyme, lavender, flowers of camomile and melilot, red roses boiled in white wine, with a drying powder made of oak ashes and a little vinegar and half a handful of salt." For a compound fracture he recommends white of egg, flour, soot from the chimney and fresh butter melted, to be applied to the wound.

Ambroise Paré abandons the use of boiling oil as a cautery

But Ambroise Paré initiated a still greater advance in surgical treatment by using the ligature in place of the actual or red-hot cautery in cases of amputation. He followed the French army during many long and arduous campaigns, and it was on the battlefield, at the Siege of Damvilliers, in 1552, that he first put his idea into practice. His teaching and practice concerning the ligature met with violent opposition, and it took a long time before it was universally recognised as the safest and most reliable treatment.

Paré did not invent the ligature, as is generally supposed, but merely re-discovered its use. Celsus speaks of it as an ordinary method in treating wounds, and Archigenes of Apamea (A.D. 48–117) tied vessels in amputating, after fixing a tight band at the root



PARACELSUS

THEOPHRATUS BOMBASTUS VON HOHENHEIM

Physician and Alchymist. Born 1493. Died 1541

of the limb. During the latter part of the sixteenth century, hot wine fomentations seem to have been a favourite method of treating wounds, although Delacroix, another famous French surgeon, still advocated and used boiling pitch, oil and turpentine.

Early in the seventeenth century Paracelsus pointed out the abuse of the suture so much employed by surgeons of the day, and declared that "*Nature healed wounds by a curative balm if left to herself.*" He observed the benefit to a wound when the air had been excluded, and recommended the use of a solution of lead acetate in surgical treatment. But although many of the substances used at this time were antiseptics of a mild nature, unfortunately they had not sufficient germicidal power to render them effective.

Paracelsus observes that Nature left to herself is the best healer

Gersdorff, an Alsatian surgeon of great experience, who lived at this period, was a disciple of Paré's, and abandoned the use of the cautery and boiling oil. He employed a styptic of his own, which he kept secret, and, after amputating, was accustomed to cover the stump of the limb with a bull's bladder, and so protect it from the air.

Towards the close of his life, Sir Francis Bacon became interested in the subject of putrefaction, but his investigations were apparently cut short by his death, the primary cause for which, curiously enough, was induced by his enthusiasm on the subject. His biographer states, that towards the end of March in the year 1626, being near Highgate on a snowy day, he left his coach to collect snow, with which he meant to stuff a fowl, in order to observe the effect of cold in the preservation of its flesh. This interesting statement is all that is known of Bacon's experiments on the subject.

Sir Francis Bacon's experiments on preserving by cold

SURGEON OPERATING ON A PATIENT'S ARM

From a painting by Dusart of the XVII century

CHAPTER V

Antiseptic Methods in the Seventeenth and Eighteenth Centuries

During the sixteenth and seventeenth centuries, superstition and witchcraft played a prominent part in the treatment of wounds. Ointments, composed of human fat and the fat of various animals, were looked upon as potent healers. Kenelm Digby's method of treatment with his "Sympathetic Powder," or weapon salve, the virtues of which were so loudly extolled, had the merit of at least not interfering with Nature's own process of healing. Digby advocated that his salve should be applied to the weapon instead of to the wound, the latter being simply cleansed and wrapped in clean bandages.

Kenelm Digby's "Sympathetic Powder"

There was little actual advance at this period towards surgical antisepsis, but two very important discoveries were made which materially assisted those that were to come. About 1690, Leeuwenhoek, a Dutch physician, who had been making observations on the larvæ of frogs and other small animals, was able to see with his improved microscope organisms which hitherto were unknown, and to him may be ascribed the discovery of what were afterwards called microbes. Redi, a poet of Tuscany, about the same period, by some simple experiments, proved that the theory that maggots were spontaneously generated was erroneous. He showed that by protecting a piece of meat with fine wire gauze, so that flies were prevented from depositing their eggs upon it, maggots did not appear. Crude though this experiment was, Huxley considered it the foundation of modern bacteriological technique, and the wire gauze was the forerunner of the antiseptic gauze of modern surgery.

Redi makes an important discovery

In endeavouring to trace the steps that led to the discovery of what is now called antiseptic surgery, it should here be mentioned that the use of the word itself is of comparatively modern origin. The term which is now so generally

Origin of the word antiseptic

applied to substances used to prevent or arrest putrefaction or analogous fermentive changes, is derived from the Greek word "*anti*"—against, and "*septikos*"—causing putrefaction. The first known use of the word antiseptic occurs in a work on plague, by Place, in 1721, to whom we shall refer later. The paragraph in which the word occurs is as follows: "This phenomenon shows the motion of the pestilential poison to be putrefactive, it makes the use of *antisepticks* a reasonable way to oppose it."

First use of the word by Place in 1721

Until the beginning of the eighteenth century the methods adopted by surgeons in the treatment of wounds made little advance. Wine, walnut leaves, aloes, myrrh, alum, borax and nitre were the principal substances used as dressings up to this time, while boiling pitch and tar were the media employed by both naval and military surgeons to arrest hæmorrhage. The French surgeons were the first to inaugurate a new era in wound dressings, and early in the eighteenth century Delamotte strongly advocated the use of brandy as a dressing for wounds. He combined this treatment with the use of tincture of aloes, and in his work on surgery he describes how he successfully dressed wounds with a pledget dipped in tincture of aloes, with the addition of wool soaked in brandy. Two bandages saturated in wine were to be finally applied over the wound as a compress.

A new method of treating wounds adopted by French surgeons

In 1720 the harmful effect of air on wounds was again recognised by Belloste, a French Army surgeon, who wrote as follows: "Both the Ancients and Moderns agree on the bad influence of air on wounds, and it is in the vitiated air of the Army hospitals that we must prevent it with all our power from penetrating the internal parts of our bodies, and those which are deprived of their integuments, for fear it will communicate to them its harmful effects." "*Air is a terrible ravager of wounds*," he adds, and concludes with the significant statement

Belloste records the bad influence of air on wounds

that "the promptest methods of dressing ought to be preferred to all others." Belloste followed the example of Delamotte in using brandy as a dressing, especially in wounds on the head. Referring to a wound on the cheek, he states that he employed with success balsam of Peru, but in other cases found brandy, alcohol and wine to be the most effective form of treatment for wounds.

Brandy as a dressing

De Villars, another French Army surgeon of this period, writing on the general cure of wounds, says: "What makes air so harmful and causes the liquids in the body to corrupt, is when it is impregnated with bad exhalations. *Wounds ought then to be dressed as quickly as possible.* He recommended tutty powder, white lead, burnt lead and burnt alum as useful dressings, but for simple wounds he states it is sufficient to wash them with pure, luke-warm water, or water mixed with red wine, and to apply a poultice soaked in brandy. If the wound be deep it ought to be washed and dried with a soft piece of lint, dipped in lukewarm red wine, then a bandage applied soaked in brandy, or a pledget impregnated with some kind of balsamic dressing.

De Villars on the general cure of wounds

Some attempt at the drainage of wounds was made by Percival Pott, Benjamin Bell, and other famous surgeons of this period, and a glimmer of light on the causation of internal disease began to be manifested.

In a treatise on the Plague, written by Place in 1721, he makes the following remarkable statements, a portion of which we have previously quoted: "As this phenomenon shows the motion of the pestilential poison to be putrefactive, it makes the use of antisepticks a reasonable way to oppose it, and whatever resists and is preservative against putrefaction, admits not of the generation of insects. If this hypothesis is proceeded upon, our proper and promising materials to yield medicine and for physical preparations against it, such as cedar, Irish oak, cinnamon,

Place's treatise on plague

spices, and what was used by the ancients in their embalmments of dead bodies; *for the same virtues that preserved dead bodies from insects and putrefaction I know no reason why they should not preserve the same bodies living from the same thing.*" But, unfortunately, Place did not put his theories into practice, although he appears to have clearly recognised the principles upon which antiseptic surgery is founded.

Place's remarkable theories on putrefaction

About the same period, Goiffon, a medical practitioner of Lyons, also made some interesting observations on the cause of the plague, which was at that time decimating Marseilles. He propounded the theory that the disease was caused *by a poison which came from without, and suggested that this poison may be propagated by little worms or insects.* He further suggested that "poisonous insects brought from foreign merchandise into the country and escaping into the air of the town, would produce all the fatal effects observed in plague." In discussing the treatment, he says that a contra-poison, or anti-toxin, should be sought. Goiffon's theory certainly foreshadows in a remarkable manner the doctrines to which Pasteur gave utterance 150 years later.

Goiffon's theory of the origin of plague

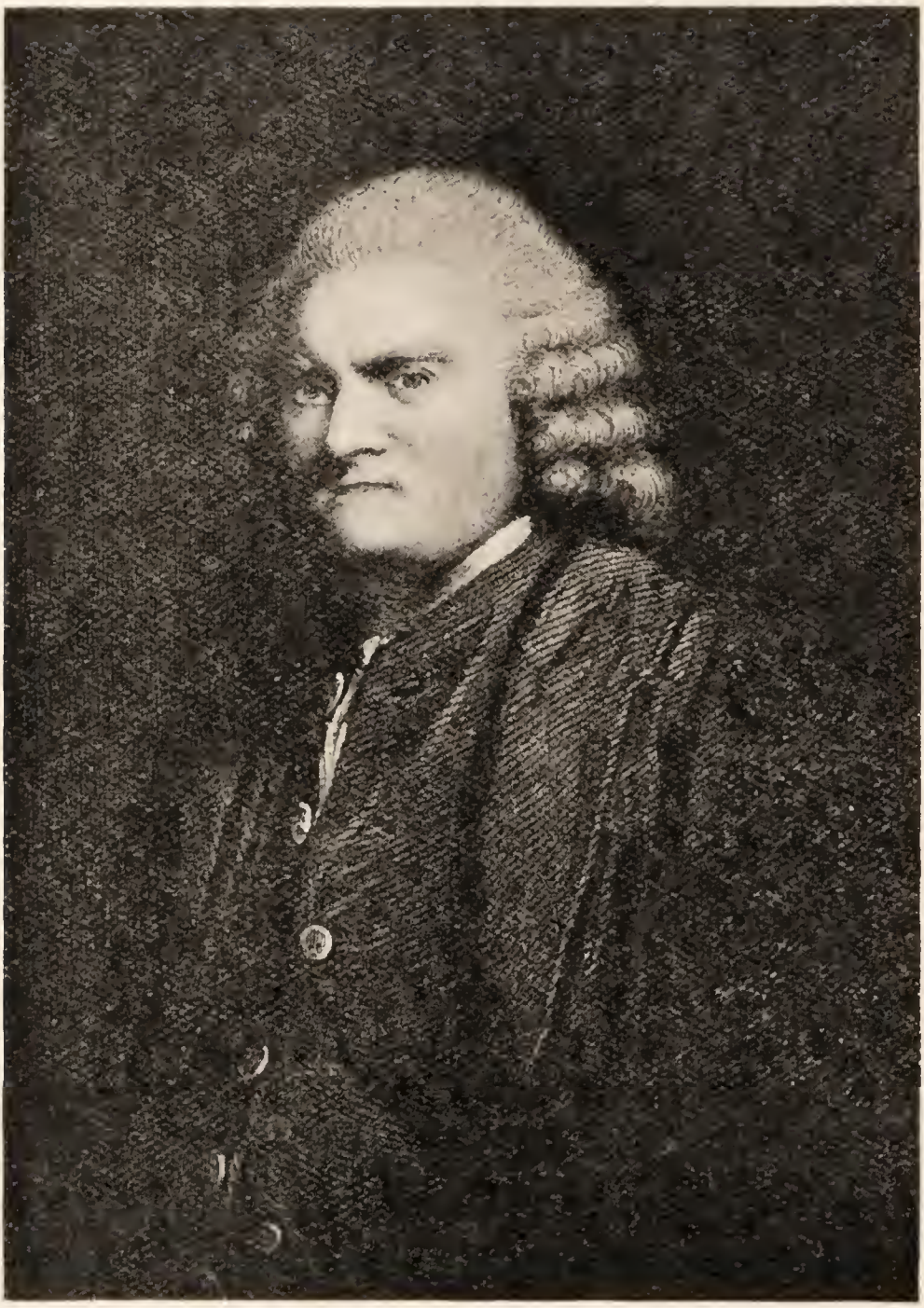
About the middle of the century, the problem of putrefaction, its cause and effects, appears again to have attracted the attention of scientific observers. Among the most prominent of these, and one to whom we must allot a foremost place amongst the pioneers in the investigation of antiseptic agents, was Sir John Pringle. Born in Scotland, in 1707, the son of a Scottish baronet, on leaving school he became a student of medicine at Edinburgh University. From thence he went to Leyden, working under the famous Boerhaave, and eventually graduated there in 1730. Returning to his native country, he commenced practice in Edinburgh, and a few years later became Professor of Pneumatics at the University. In 1742, he was appointed physician to the Earl of Stair, who was then

Commander of the British Army, and, shortly afterwards, was constituted physician to the Military Hospital in Flanders, and during the time he held that office, served throughout the campaign in the Low Countries as physician to the British troops. During this period he made a careful study of the diseases prevalent in the army, the results of which he published in the form of a treatise, which created at the time a revolution in military medicine and surgery throughout Europe. This work passed through seven editions, and was translated into French and German. Pringle was the first to propose that hospitals on both sides should be treated as sanctuaries for the sick, and mutually protected. He did much for the improvement of military hospitals by the introduction of ventilation into the wards for the wounded.

The career of Sir John Pringle, a pioneer in the study of antiseptics

On retiring from his military post he returned to Great Britain, and in 1750 commenced his investigations of antiseptics, the results of which he communicated in several papers to the Royal Society. These were entitled "Experiments upon aseptic and antiseptic substances, with remarks relating to their use in the theory of medicine." In the course of this treatise, he states, he was led to make his experiments on putrefaction, by having a large number of putrid distempers under his care in the hospitals of the army. Before his time it had been a common belief that alkaline salts promoted putrefaction, but Pringle by his experiments completely controverted this theory by proving that alkali tended to arrest rather than to promote putrefaction; to use his own words: "By some mistake of the chemist's, putrefaction in animal substances was confounded with the idea of a highly alkaline salt." To prove this he at first carried out a series of experiments with alkaline salts as preservatives of beef, to demonstrate their power of resisting putrefactive changes. He then carried out a similar series of experiments with resins and gums,

Pringle's experiments



Sir John Pringle

Famous Army Surgeon

Born 1707. Died 1782

including myrrh, which he states he found twelve times more antiseptic than sea-water and camphor. The results of his investigations he embodied in a table, which is here produced, which claims to show the comparative powers of various solids :—

Sea salt . .	1	Salini mixture (salt of wormwood and lemon juice)	3
Sal gemmæ . .	1+	Nitre . . .	4+
Tartar vitriolated	2	Salt of hartshorn .	4+
Spiritus Mindereri (vinegar and salt of hartshorn) .	2	,, ,, wormwood	4+
Tartarus Solubilis	2	Borax . . .	12+
Sal Diureticus .	2+	Salt of amber .	20+
Crude Sal Ammoniacum . .	3	Alum . . .	30+

For these researches Sir John Pringle was awarded the Copley gold medal, and in 1761 was appointed by George III. to be physician to the Queen's household. He died in 1782.

About the middle of the eighteenth century a "grande dame" of France became so much attracted by the study of putrefaction and its causes, that at the age of twenty-three she left the fashionable world which she had hitherto adorned, installed herself in a laboratory, and began a series of experiments which had a real practical aim. This unusual occurrence is the more worthy of note, inasmuch as the lady never signed her works. Those who know the work entitled: "Essai pour servir à l'histoire de la Putrefaction," a volume of 600 pages, published in 1766 by Didot the younger, are, in all probability, unaware of the fact that the author was Madame d'Arconville. Her history is remarkable. Marie Genevieve Charlotte Darlus, was the daughter of André Guillaume Darlus, secretary to the King, and farmer-general, and of Françoise Gaudicher de la Hallebardière. She was born October 17, 1720. On February 28, 1735, at the age of fourteen, she was married to Louis Lazare Thiroux d'Arconville, by

A lady scientist of the eighteenth century

whom she had three children. At the age of twenty-three she was attacked by smallpox, which was very prevalent at that time, and terribly disfigured; inasmuch that she renounced the world, dressed herself "as an old woman in a cap and wings," and gave herself up henceforward to the study of science and letters. She studied history, medicine, physics, chemistry, and even followed the anatomical and botanical courses at the Jardin du Roi, thus acquiring knowledge equally varied and extensive. Her salon was attended by the most distinguished men of the period—Turgot, Malesherbes, Monttiyen, de Tussieu, Fourcroy, Lavoisier, and Gresset were all to be met there. She made several translations from the English, and herself published anonymously several books which attained a certain reputation.

Study of science and letters

During the Terror she was imprisoned at Picpus, together with her eldest son, Thiroux de Crosne, ex-lieutenant-general of police, and her brother-in-law, Angrand d'Alleray, both of whom died on the scaffold. More fortunate than they, she regained her liberty on the 9th Thermidor. She died in Paris at her hotel, No. 15, Rue de Chaume (now No. 60, Rue des Archives), on December 24, 1805, at the age of 85, and was buried in the parish church of St. Nervy.

Her works were truly encyclopædic, embracing history, literature, physics, philosophy, and chemistry, but we are only concerned with the "Essai pour servir à l'histoire de la Putrefaction."

Pringle had previously published his researches on the subject, and it was Madame d'Arconville's aim to complete his work, which evidently inspired her. She understood the practical use to which such investigations might tend. "The studies of every sensible man should have a practical aim," she wrote in her preface. "The knowledge of the substances which may delay or hasten putrefaction," was the practical aim which she set before herself. It is interesting to note that she gives the name of antiseptics to those substances which retard putrefaction,

or septics to those which promote it. By a course of reasoning she foresaw the possibility of their use in medicine, particularly in the treatment of wounds, and gives an accurate classification of antiseptics. All her experiments, to the number of 300, were conducted on similar lines. She placed in a phial a certain determined weight of the particular putrefiable substance which she wished to investigate, such as meat, milk, eggs, bile, and added thereto a certain determined quantity (always the same) of the liquid whose antiseptic properties she wished to test. She was careful to note exactly the temperature, state of the weather, directions of storms, etc.; moreover, by the aid of blue paper or of syrup of violets, she tested the acidity or the alkalinity of her medium. Thus she was able to compute the delay in putrefaction caused by the action of the antiseptic.

These experiments lasted ten years (1754–1764), and we shall see presently what her theories were with regard to matter. She begins by saying that certain substances favour putrefaction; these she calls septics. Evidently she is speaking of substances which ferment readily, such as sugar, gum arabic, certain salts and infusions. Next, she divides the substances examined into thirty-two classes, according to the length of time during which they have kept meat sweet from one day to seven months. The last class of antiseptics comprises those which, she states, preserve it indefinitely. She recorded her results in the following table:—

Madame d'Arconville's experiments

Metallic salts.—Corrosive sublimate, blue vitriol, subsulphate of mercury, silver vitriol, sal de Saturne, nitre mercurial.

Gums and resins.—Balsam of Peru, camphor, Burgundy pitch, styrax, ammoniac.

Extracts and simple substances.—Extract of cinchona, powdered cinchona, dried guaicum, powdered gall-nuts.

Vinous liquids.—Bordeaux, Arbois, and Spanish wines.

Acids.—Red vinegar.
Fixed alkalis.—Volatile salts of hartshorn.
Earths.—Quicklime.
Juices.—Neutral salts, earthy salts.
Waters.—None.

These substances, she says, not merely arrest putrefaction in decomposing bodies, but also take away the corruption which depends upon it. She calls these true antiseptics; nor can we contradict her, seeing that her list contains such substances as corrosive sublimate, sulphate of copper, balsam of Peru, etc. "It is true," she writes, "that the metallic salts with which I have made my experiments can for the most part be employed in medicine only with much care and precaution, and they must even be diluted and softened if they are to be used to preserve anatomical subjects, such as birds and insects. But there is every reason to believe that by diluting these substances with water we can diminish their stipticite, without diminishing their preservative, qualities. By this method, though we can rarely use them for the treatment of wounds and diseases, we can at least make them of service in preserving anatomical subjects from corruption. . . . But without dwelling longer on this point, the class preceding, furnishes us with plenty of other antiseptic substances, which we can employ successfully, both in medicine and surgery, without having recourse to the metallic salts." These substances are powdered cinchona, styrax, benzoin, camphor, balsam of Peru, etc. Madame d'Arconville arrived, moreover, at another practical conclusion, to which she refers repeatedly in the course of her work: *i.e.* that to prevent putrefaction, it is, above all things, necessary to exclude the outer air. This is her theory upon the subject. "Putrefaction is a natural process. Every organic body, as soon as it ceases to mature, advances more or less rapidly towards destruction. We may regard putrefaction as the design of Nature, and the two degrees of fermentation which precede it as its preliminaries."

Her theories on the cause of putrefaction

In her opinion it is a simple problem of disintegration. The two degrees of fermentation to which she refers, are acid fermentation and gaseous fermentation, stages through which all putrefying bodies must pass.

Madame d'Arconville undoubtedly deserves a place among the pioneers of the study of antiseptics.

In 1745, Needham made a series of experiments in order to show that the higher forms of animal life, which had been supposed to arise from putrefying matter, came from outside sources. He heated putrescible materials in vessels whereto the re-entry of atmospheric air was as rigidly as possible prevented; if there had been pre-existent germs, he urged, these must have been destroyed by the high temperature; animalculæ were discovered, therefore these must have been generated from the organic material. The result of his experiments was afterwards systematised by Buffon. The low forms of life were hitherto supposed to arise from the dead elements of matter. Needham's experiments were followed by Spallanzani, who argued that in the former's experiments, the temperature used was not sufficiently high to destroy the vital properties of the germs, and that to suppress all production of infusoria, it was necessary to maintain a boiling temperature for three-quarters of an hour.

Needham's experiments

Sweet-smelling plants, such as woodruffe, were recommended for medicinal purposes by Linnæus, in his *Philosophia Botanica*, in 1751, where it is stated that such plants not only drive away moths and other destructive vermin, but also "when chewed, preserve people from infectious disorders." In recent years, Klein has pointed out that some plants, owing to their strong odours, have a certain amount of antiseptic power. The experiments of Omeltschenko have confirmed the view that the vapours of essential oils also exercise a bactericidal action. The bacillus of typhus has been killed in 45 minutes by air containing the vapour from oil of cinnamon or oil of valerian. Similarly, the bacillus of tuberculosis was destroyed

DAVID MACBRIDE, M.D.

Born 1726. Died 1778

in 23 hours by oil of cinnamon, and in 12 hours by oil of lavender or oil of eucalyptus. Essential oils have been classified by Omeltschenko, according to their bactericidal power, as follows:—Cinnamon, fennel, lavender, cloves, thyme, mint, anise, eucalyptus, turpentine, lemon and rose, the last two being very weak as compared with the others. The work done in this direction requires confirmation, but the results so far obtained, go far to prove that there was something in the notions which prevailed long ago with regard to the preventive and remedial powers of odorous plants and their products.

In 1753, Pibrac introduced a simple method of dressing wounds, after an operation, which he describes as follows: "The sides of the wound should be brought together with bandages, and I put others of finer quality on the wound, dipped in a mixture of plain water and brandy, in which I had beaten up the whites of eggs." Heister, writing in 1763, stated his convictions that wounds were badly affected by the action of the air, and recommended that dressings should be applied as rapidly as possible. In 1767, Professor MacBride, of Dublin, carried out some experiments on the respective qualities of antiseptics. In the report of his investigations, he states that, "acids and alkalis destroy putrefaction, and give back the original softness to affected parts, but not in live bodies." He made a series of interesting experiments to test the antiseptic power of substances used by physicians in antient times for preventing putrefaction. His method was to place a certain quantity of these substances with fresh meat, and to note the period at which putrefaction set in. The results of these experiments, he says, proved that vitriol, sea salt, vinegar, and lemon juice would keep meat sweet for four days. He also tried the effects of several kinds of alcoholic liquors in the same manner, and claimed that claret and Portuguese white wine possessed the greatest antiseptic properties. Crude

Pibrac advocates a simple method of dressing wounds

MacBride's researches

as these experiments were, they served to attract attention, and led others to search for substances of greater power to prevent decay.

The Academy of Sciences at Dijon, in 1770, offered a prize for the best treatise on Antiseptics. This was won by Bordenave, a French investigator. His conclusions are summed up in an essay, in which he states that "those who occupy themselves in the search for antiseptic remedies, found their ideas on the effects they observed in testing the flesh of animals with various substances. These experiments, however, though throwing some light on the subject, are illusory in some respects, and quite insufficient. The flesh on which they experimented was that of healthy animals who died suddenly, and in which there was no evidence of putrefaction, a state which can hardly be compared with that of affected parts. The same treatment cannot be applied in arresting or diminishing putrefaction on a living body. The most efficacious antiseptics would be employed in vain, and their use would be superfluous, often prejudicial, were not the nature and the causes of the disease taken into consideration.

Bordenave's investigations into the cause of putrefaction

"The cause of putrefaction in a living body being the separation of too great a quantity of air, the chief use of an antiseptic ought to be to prevent that element escaping, or to give back to the body, actually in a state of putrefaction, a part of the air which it has lost.

"Such are the effects which have been shown by experiments to take place with different substances in bodies quickened by the use of different remedies. Thus, in antiseptics, it is not only necessary to consider the remedies which arrest actual putrefaction, but those which prevent and cure it, although in appearance these remedies may be very similar.

"It has been recorded in Germany that a coating of turpentine oil preserved a gangrened leg for five months, which became as dry as that of a mummy."

Bordenave strongly advocated the use of astringent substances as preventives of putrefaction, and states that he employed the same method for preventing humid putrefaction in the foot of an old man afflicted with scurvy, while waiting for nature to trace the separation line which occurs in the joint of the foot and leg.

"Experiments have shown us," he continues, "that putrid animal exhalations are very pernicious. A great many pestilential diseases have been brought about by large quantities of locusts and dead whales. After a battle, buried corpses have often given rise to epidemics. Ambroise Paré records that a great number of dead having been thrown, in 1562, into a deep well, there arose, two months after, contagious and offensive fumes, which spread in the country and round about, and many districts were infected with plague. What is said of putrefied bodies can also be applied to noxious mineral or vegetable matter, and it is easily understood how air which has thus become changed, can become in us a cause of putrefaction, by causing a putrid fermentation which infects all the liquids in our bodies."

Following on the simple lines suggested by Pibrac, in 1780, Hevin, writing on the treatment of wounds, states: "For ordinary wounds it is only necessary to foment the parts from time to time with lukewarm water, vulnerary water, or brandy distilled with two-thirds of ordinary water. Also, that sometimes nature alone is sufficient to heal wounds, provided they are covered up with dry lint, to protect the flesh from contact with the air."

About 1785, Larrey, who was Surgeon-in-Chief to Napoleon's "Grande Armée," and Percy, another famous military surgeon under the Consulate and Empire, both strongly advocated the use of pure cold water in the treatment of gunshot wounds. According to Rochard, "they eventually employed no other dressing but pure water, with the addition sometimes of alcohol or extract of lead."

A story is told that after a battle near Strasburg in 1785, the two surgeons were called to see some wounded soldiers, whose wounds were claimed to have been quickly healed after being dressed by an Alsatian miller with some miraculous water. On investigating the so-called miraculous water, Percy and Larrey found that it was nothing but water from the millstream in which the old miller had dissolved a little alum; the application of the dressing being accompanied by some incantations and cabalistic signs. The surgeons resolved to experiment on their own account with so simple a remedy, and the results astonished them. Percy soon became imbued with such faith in the therapeutic value of the pure-water dressing, that he is said to have once remarked that he would have abandoned army surgery if he had not been able to use it.

Larrey and Percy use cold water in dressing wounds

Extolled by Larrey and himself, the pure-water surgical treatment of wounds soon became known throughout Europe, and the practice was adopted by most army surgeons. Alcohol and vulnerary herbs were practically abandoned, although alum, salt, brandy, and extract of lead were still added to water or applied otherwise, when good water was not obtainable.

Percy's new method of dressing was completed by enveloping the wound with an impermeable piece of linen to prevent evaporation.

Although many investigators came so near the mark, they never seemed to grasp the importance of applying the principles they had discovered to practical utility, and though a considerable advance was made in the study of antiseptics during the eighteenth century, cauterisation with red-hot irons survived until its close, and was even warmly advocated by Poutteau, the leader of the Lyons School of Surgery.

CHAPTER VI

Antiseptic Surgery: The Period of Pasteur and Lister

The advent of the nineteenth century saw the dawn of a new era, which was destined to revolutionise the surgical art. The investigation of the cause of putrefaction excited interest even beyond the world of science, and to Appert, a French confectioner, we owe the first contribution to the growing knowledge of the principles underlying antiseptics in the nineteenth century. He discovered a method of preserving meat, fruit and vegetables by means of excluding the air and hermetically sealing the vessel in which they were contained.

Appert's great discovery

In 1822, Treviranus established the fact that the various kinds of animalculæ observed, varied with, and depended upon, in the case of decomposing vegetable macerations, the kinds of plants employed. Gay-Lussac made an examination of the air contained in bottles in which decomposing substances had been preserved by Appert's method, and finding that it contained no oxygen, concluded that the presence of oxygen was the chief cause of putrefaction. This view, however, was soon exploded by Schwann in 1837, who made a series of important experiments on putrefaction. He placed decoctions of meat in flasks, sterilised the decoctions by boiling, and then supplied them with calcined air, the power of which to support life he showed to be unimpaired. Under these circumstances, putrefaction never set in. Hence he concluded that putrefaction was not due to the contact of air alone, as affirmed by Gay-Lussac, but to something suspended in the air, which heat was able to destroy, and thus exploded the latter's theory.

Schwann controverts Gay-Lussac's theory

In 1835, Bassi undertook an investigation of the disease in silkworms, which was known as muscadine. He found and proved that it was caused by a parasite, and discovered that the parasite could be

Louis Pasteur

Born 1822. Died 1895

killed by certain substances. He was a man of keen penetration, and foresaw that this discovery meant something more than the elucidation of the cause of the silkworm disease. He stated his belief that smallpox, plague, and other contagious diseases were produced by vegetable or animal parasites, and that gangrene was caused by such entities. In his own words, "observation and experiment demonstrate to us, that all contagions disappear or cease to act in the individual whom they assail, when agents or means are used capable of destroying the life of the animal or vegetable organism of the lowest class that produces, so to speak, contagious diseases."

Bassi investigates the disease of silk-worms, and recognises a parasite

Bassi actually cured certain ulcerations by injections of corrosive sublimate, which is now so largely used in antiseptic surgery.

Schwann's discovery was corroborated, in 1854, by Schrœder, and, in 1859, by Busch, when the air supplied to the flask was neither heated nor chemically acted upon, but simply allowed to pass through a plug of cotton wool which acted as a filter.

The investigation made by Pouchet, who, with great care, examined the progressive development of living forms in putrefying solutions, must also be mentioned. He concluded that organisms could be found in organic solutions which had been boiled, and for which no germs could have possible access as, instead of atmospheric air, an artificial atmosphere or oxygen alone was admitted to the flask. These conclusions were strongly contested at the French Academy of Sciences, by Milne Edwards, Claude Bernard, and others.

Pouchet advances a new theory

It was 1845 before the next step in advance was made in the germ theory of disease, when Semmelweiss, an Austrian physician, discovered that puerperal fever, the rate of mortality from which was terribly high in the General Hospital at Vienna, was due to infection borne from the dissecting-room on the hands of the students, He insisted that before proceeding to

examine any patient, the student should thoroughly cleanse his hands with chlorine or chlorinated lime-water. The result of these precautions reduced the death-rate from 12·24 per cent. to 1·27 per cent. But in spite of such extraordinary results, and the vigorous manner in which Semmelweiss advocated his doctrines, the principles he laid down were neglected and bore no fruit.

New methods advocated by Semmelweiss

The commencement of a new epoch came as a direct outgrowth of Pasteur's studies of the fermentation of alcoholic beverages. Probably, no one thought at the time that the result of these researches would be so far-reaching and prove of such inestimable benefit to humanity. Pasteur discovered not only that the fermentation of beer and wine was due to living organisms, but that many other fermentations, and indeed all putrefactions, were due to the same cause. The remarkable series of experiments which he entered upon to prove his theories must be regarded as one of the most brilliant discoveries ever made in the realms of science. These he conducted with a double object in view, the first being the refutation of the doctrine of abiogenesis, or spontaneous generation, and second, the establishment of the fact that all fermentation is due to the presence of minute organisms or living germs, and, without these, the life needful for the process of fermentation could not exist. He showed that rancid butter owed its butyric fermentation to the presence of similar putrefactive infusoria, and that the presence of air was destructive to these—in short, that they throve without oxygen. Pasteur divided microscopic organisms into the two great classes, which he named aerobies and anaerobies respectively. "There is nothing in the air," he affirmed, "that is conditional to life save the germ it carries," and this theory he set out to prove. Pouchet and his followers at once took up the gauntlet thrown down by Pasteur, and a long scientific duel between these two leaders and their disciples followed.

Pasteur commences his researches on fermentation

The issue was one of the greatest importance, and Pasteur renewed his researches so that he might prove his case up to the hilt. He asserted that if absolutely pure air could be obtained from all sources, no change would occur in the putrescible fluid, and, to prove this, he undertook some experiments at Chamonix on September 20, 1860. To the summit of Montamvert he took twenty flasks, which were filled with the pure air and immediately hermetically sealed. Of these only one was found to be contaminated, from which he adduced that dust suspended in the atmospheric air is the exclusive origin and the necessary condition of life infusions. He further demonstrated that decomposition of substances and fluids was only another form of fermentation, and that animal fluids, such as blood, did not putrefy, if pure and kept from the air, the vibrios of putrefaction being excluded. In 1862, Tyndall confirmed Pasteur's conclusions and demonstrated the truth of his inferences by experiments which covered a number of years. Writing to Pasteur at a later period, he says: "For the first time in the history of science we are justified in cherishing confidently the hope that, so far as epidemic diseases are concerned, medicine will soon be delivered from empiricism and placed on a real scientific basis. When that great day shall come, humanity will, in my opinion, recognise the fact that the greatest part of its gratitude will be due to you."

Pasteur confirms his theories

Tyndall confirms Pasteur's conclusion

Pasteur's later experiments led him to the conclusion that suppuration was but a fermentation of the flesh, and that this might be prevented by destroying the germs that caused it, or by preventing their entrance. To this end, in 1862, he urged the use of boric acid for surgical purposes, as in the disinfection of the blood.

It was on April 30, 1878, that Pasteur gave his famous lecture, in which he propounded the germ theory in his own name, and that of Joubert and Chamberlane. He began in the following notable words: "All science is gained by mutual support.

PASTEUR'S TOMB

PARIS

When, subsequently to my early communications on fermentation in 1857-58, it was admitted that ferments properly so-called are living beings; that germs of microscopical organisms abound on the surface of all objects in the atmosphere and in water; that the hypothesis of spontaneous generation is a chimera; that wine, beer, vinegar, blood, and all the liquids of the economy are preserved from their common changes, when in contact with pure air—Medicine and Surgery cast their eyes towards these new lights." He then proceeded to expound, in his masterly manner, the theories that he had elaborated. "If I had the honour of being a surgeon," he continued, "convinced as I am of the dangers caused by the germs of microbes scattered on the surface of every object, particularly in the hospitals, not only would I use absolutely clean instruments, but after cleansing my hands with the greatest care and putting them through a flame (an easy thing to do with a little practice), I would only make use of charpie, bandages and sponges which had previously been raised to a heat of from 130° C. to 150° C., and I would only employ water which had been heated from 110° C. to 120° C."

First use of the term microbe

It was Sédillot, in March, 1878, who first proposed the word microbe to be used as a generic term for the class of organism described by Pasteur. Through Pasteur's adoption of it, the word soon became used all over the world.

Pasteur's later researches into the causation of splenic fever and hydrophobia, and the attenuation of virus, are too well known to be recapitulated here.

Detz, Schrœder and Hewson revive the use of absorbent earth in dressing wounds

Meanwhile, surgeons were still groping in the dark for some dressing that would prevent the terrible mortalities that resulted in many cases from open wounds. In 1858, Detz revived the antient practice of using an absorbent earth as a surgical dressing. He was followed by Schrœder, who advocated a similar method in 1863, and still later by Hewson, in the United States, in 1872, whose method was as follows: Yellow clay, dried

LORD LISTER

Born 1827

and powdered, was sifted in fine muslin and applied to the wound. This was claimed to relieve pain, diminish suppuration, and promote the process of healing. In 1865, Werner de Mulhouse suggested a dressing composed of Venice turpentine, 1000, sodium bi-carbonate, 25, dissolved in distilled water, 10 litres. A little later, the use of turpentine was revived as a dressing for wounds by Dr. Bond, who claimed that it possessed "incontestably the property of neutralising putrid odours," and applied on the surface of a wound, it adhered closely, spreading a thin skin around it, and thus sheltering it from the air, an effect which is lasting, on account of the slowness with which it evaporates.

On the other hand, turpentine can be applied to a raw wound without harm, and it exercises on the healing process a marked and stimulating effect.

In 1854, the first attempts to use carbolic acid as a surgical dressing were made by Lemaire, of Paris; and in 1855 it was first employed at St. Mary's Hospital in London.

Carbolic acid first used as a surgical dressing

Although Pasteur himself had seen the bearing that these discoveries were likely to have on the surgical art, it was left to Lister to carry out and apply them to their great life-saving conclusion.

Joseph Lister was born on April 5, 1827, at Upton in Essex. His father was a merchant in the City of London, and he received his early education at a school kept by members of the Society of Friends at Tottenham. He subsequently proceeded to University College, and took his B.A. degree at the early age of twenty. He then spent five years in the study of medicine at the medical faculty of University College and at University College Hospital, graduating in medicine in 1852. After serving the usual offices in hospital he determined to visit Edinburgh to obtain experience under Syme, to whom he became assistant.

Lister's early life

In 1860 he was appointed Professor of Surgery to Glasgow University, but before leaving for that city

he had already commenced his bacteriological work in connection with antiseptics. In 1865, he communicated to the *Lancet* a series of papers in which he laid down, as the basis of his methods, the principles established by the philosophical researches of Pasteur.

Appointed Professor of Surgery to Glasgow University

Before Lister's time, the method devised by Syme of Edinburgh was that generally adopted in the treatment of wounds. Hæmorrhage, in the case of small vessels, was arrested by torsion. The stitches were of silver wire, as recommended by Marion Sims in 1857. Pressure was made on the flaps or sides of the wound by folded pads of dry lint, and a piece of the same material was bandaged lightly over its lips. When a complaint of pain and a quickened pulse gave the warning of commencing suppuration, these dressings were removed by being bathed with warm water, and either a water dressing covered with gutta percha tissue or a poultice was applied. Complete union could not be looked for under any circumstances until the last of the ligatures had separated, which might be three weeks, or even longer, after the infliction of the wound.

Syme's methods

At the period of Lister's appointment to Glasgow, tetanus, erysipelas, septicæmia, pyæmia, and hospital gangrene were scarcely ever absent from the wards of our hospitals. There was no certain knowledge of the causation of these wound-begotten diseases, and no sure means of avoiding them.

Many a surgeon's heart was well nigh broken by these terrible visitants after he had done everything in his power to bring about his patient's recovery.

Such was the condition of things in Glasgow when Lister took up his work there. Hospital diseases were distressingly prevalent, and the fate of every patient who suffered from a wound had to be regarded with some degree of anxiety. These conditions produced in Lister's mind a sense of discontent with things as they were, although others appeared to regard them as inevitable.

Lister's work in Glasgow

He began by insisting on scrupulous cleanliness in the wards, on the frequent washing of the hands of all those assisting at operations or engaged in the dressing of wounds, while he constantly used various deodorant lotions and recommended the frequent changing of dressings in all suppurating wounds.

In an address that he gave at the meeting of the British Medical Association in Dublin, in 1867, he observed "that when it had been shown by the researches of Pasteur that the septic properties of the atmosphere depended not on oxygen or any gaseous constituent, but on minute organisms suspended in it, which owed their energy to their vitality, it occurred to me that the decomposition of the injured part might be avoided, without excluding the air, by applying as a dressing some material capable of destroying the life of the floating particles." The material he was first led to use was carbolic acid, and he determined to try what power it might possess in preventing putrefactive changes in a case of compound fracture. At that time compound fractures were the dread of surgeons, and amputations the general rule. A method of using the antiseptic was soon adopted, and carried out in a series of cases with the most astonishing results: the injuries followed the same quiet course as if the skin had remained unbroken.

Lister first made his system of treatment known to Pasteur in the following letter which he wrote from Edinburgh to the French scientist on February 13, 1874.

"My dear Sir,

"Allow me to beg your acceptance of a pamphlet which I send by the same post, containing an account of some investigations into the subject which you have done so much to elucidate, the germ theory of fermentative changes. I flatter myself that you may read with some interest what I have written on the organism which you were the first to describe in your 'Memoire sur la fermentation appelée lactique.'

"I do not know whether the records of British surgery ever meet your eye. If so, you will have

seen, from time to time, notices of the antiseptic system of treatment, which I have been labouring for the last nine years to bring to perfection.

"Allow me to take this opportunity to tender you my most cordial thanks for having, by your brilliant researches, demonstrated to me the truth of the germ theory of putrefaction, and thus furnished me with the principle upon which alone the antiseptic system can be carried out. Should you at any time visit Edinburgh, it would, I believe, give you sincere gratification to see at our hospital how largely mankind is being benefited by your labours.

Lister writes to Pasteur

"I need hardly add that it would afford me the highest gratification to show you how greatly surgery is indebted to you.

"Forgive the freedom with which a common love of science inspires me, and

"Believe me, with profound respect,

"Yours very sincerely,

"Joseph Lister."

The complete story of Lister's early experiments in the antiseptic treatment of wounds is best told in his own words, which we have extracted from an historic letter he wrote early in 1906 to Sir Hector Cameron:—

"In treating surgical cases antiseptically, I always endeavoured to avoid the direct action of the antiseptic substance upon the tissues, so far as was consistent in the existing state of knowledge with attaining the essential object of preventing the development of injurious microbes in the part concerned.

"In compound fracture, to which, in 1865, I first put in practice the antiseptic principle, I applied undiluted carbolic acid freely to the injured part in order to destroy the septic microbes already present in it; regarding the caustic action which I knew must occur as a matter of small moment compared with the tremendous evil which it was sought to avoid. But when this had once

Lister's account of his early experiments

been done no further direct action of the antiseptic upon the tissues occurred. The carbolic acid formed with the blood a dense chemical compound, which, together with some layers of lint steeped in the acid, produced a crust that adhered firmly to the wound and the adjacent part of the skin. This crust was left in place till all danger was over, its surface being painted from time to time with the acid, to guard against the penetration of septic change into its substance. Meanwhile in the undisturbed wound the beautiful result occurred that the material of the crust within it, and the portions of tissue which had been destroyed by the caustic, were replaced by living tissue formed at their expense.

"That dead tissue, when protected from external influences, was so disposed of, was a most important truth, new to pathology; and it afterwards suggested the idea of the catgut ligature.

"I do not remember whether you saw the case that led me to apply the antiseptic principle to abscess. The patient was a woman, above the middle period of life, with lumbar abscess. Taught by the disastrous results that sooner or later followed the evacuation of such abscesses, whether by valvular opening or by cannula and trocar, I left the case undisturbed, till one day, on looking at it, I found that nothing but epidermis seemed to intervene between the pus and the external world, so that if left for another day it would in all probability burst.

"I therefore resolved to open it, and apply a dressing which should imitate, as much as circumstances permitted, that which we used in compound fractures. The pus which escaped on incision was as thick as any I ever saw. Mixing some of it with undiluted carbolic acid, I applied some layers of lint, soaked with the mixture, to the wound and surrounding skin, and covered them with a piece of thin block tin, moulded to proper shape, such as we used for covering the crust in compound fracture. This metal covering, which prevented loss of carbolic acid by evaporation

and soaking into surrounding dressings, was fixed by strapping, and a folded towel was bandaged over it to absorb discharge.

"Next day, on changing the dressing, I was greatly astonished to see nothing escape from the incision except a drop or two of clear serum. What was now to be done? I had no longer any pus to mix with the carbolic acid. But it occurred to me that I might make a satisfactory crust by mixing carbolic acid with glazier's putty. Accordingly I sent to the dispensary for some whiting and boiled linseed oil, and making a solution of one part of carbolic acid in four of the oil, rubbed it up with whiting in a mortar, thus making a carbolic putty. This I spread on a piece of block tin and applied it as I had done the first dressing. There never was any further discharge of pus; the serous oozing diminished rapidly, and, before long, healing was complete.

"In that case, as there was no spinal curvature, I could not be sure that the abscess was connected with the vertebræ. But similar results afterwards followed the same treatment where discharge of bone showed that such connection existed, and also in suppuration of the hip joint, whether attended with shortening of the limb or not, scrupulous care being taken to keep the affected part completely at rest. The time required for final closing of the sinus was, however, generally much longer than in the first case.

"Precisely the same beautiful result, so entirely novel and so full of deep interest, both for pathology and practice, was seen when acute abscesses were treated in the same way, the only difference being that, in the acute cases, the serous oozing which followed evacuation of the pus came much more rapidly to a conclusion.

"In order to ensure freedom of escape for the serum, a narrow strip of lint soaked with a solution of carbolic acid in four parts of olive oil was inserted in the incision. But the antiseptic substance was never from first to last applied to the cavity of the

abscess, as such treatment could only have been productive of needless irritation.

"I continued to use a strip of lint as a drain for about five years, with perfectly satisfactory results. But in 1871, having opened a very deeply-seated acute abscess in the axilla, I found, to my surprise, on changing the dressing next day, that the withdrawal of the lint was followed by escape of thick pus like the original contents.

"It occurred to me that in that deep and narrow incision the lint, instead of serving as a drain, might have acted like a plug, and so reproduced the conditions present before evacuation. Taking a piece of the indiarubber tubing of a Richardson's spray producer that I had used for local anæsthesia at the operation, I cut holes in it and attached knotted silk threads to one end, so improvising a drainage tube. This I put to steep for the night in a strong watery solution of carbolic acid, and introduced it in place of the lint on changing the dressing next morning. The withdrawal of the lint had been followed by discharge of thick pus as before, but next morning I was rejoiced to find nothing escape unless it were a drop or so of clear serum. This rapidly diminished, and within a week of the opening of the abscess I was able to take leave of my patient, the discharge from the abscess cavity having entirely ceased.

"After that case, I used drainage tubes, as a rule, in the treatment of abscesses. But it is well to remember that if such a tube should not be at hand, a narrow strip of lint—sterilised, of course, with some trustworthy antiseptic solution—will in almost every case answer the purpose equally well.

"The crude carbolic acid which, under the name of German creosote, was supplied to me by my colleague Dr. Anderson, Professor of Chemistry in the University of Glasgow, was a brown liquid which had been adulterated with water, and this lay on the top as a clear layer destitute of any flavour of carbolic acid. This led me in my first paper on compound fracture,

to speak of carbolic acid as absolutely insoluble in water. But when it was afterwards produced in a comparatively pure condition in colourless crystals, it proved to be capable of being taken up by water, though twenty parts were required for the purpose. The watery solution, however, though weak numerically, showed itself to be exceedingly potent as an antiseptic. Having applied it to a foul sore in the palm of the hand, I found on changing the dressing next day that all putrefactive odour had disappeared.

"This enabled me to use carbolic acid for washing wounds after operations, and so to extend the application of the antiseptic principle to surgery in general. In the state of knowledge at that early period, it seemed imperative to apply a powerful germicide to the wound before closing it. To use undiluted carbolic acid for operation wounds, as I had done in compound fracture, was out of the question; and carbolic oil, though I did indeed try it, was ill adapted for the purpose. But the watery solution could be satisfactorily used not only for washing the wound, but also for purifying the surrounding skin, the hands of the operator, and the instruments.

"The entire absence of carbolic acid in the layer of water on the 'German creosote' with which I made my first attempts with compound fractures, indicates that there were present in the crude product, substances for which the acid had incomparably greater attraction than it had for water. When purified from these substances, it is indeed soluble in water, but only in small amount; and being so feebly held by water it is free, when in watery solution, to act upon other matters for which it has stronger attraction. Thus was explained the remarkable germicidal energy of a lotion containing only a twentieth part of carbolic acid, as illustrated by the foul sore in the hand before referred to.

"With linseed oil, on the other hand, the acid could be mixed in any proportion, and, being firmly held by the oil, it was mild in action, though present in

the large proportion of 1 to 4, as used in the carbolic putty. The 1 to 4 carbolic oil is bland when applied to the tip of the tongue, whereas the 1 to 20 watery solution is intolerably pungent.

"The acid in the watery solution, while potent in action when applied, is soon dissipated, whereas it is slow in leaving the oil. Hence the watery solution, powerful but transient in operation, was admirably adapted for application to a cut surface as a detergent, while the carbolic putty, bland in action, and serving long as a store of the antiseptic, could be used with good effect not only for abscesses but also as an external dressing for operation wounds, and for that purpose I long employed it. The putty was used in a layer spread on calico, freely overlapping the skin around the wound and covered with a folded cloth to absorb the serum that flowed from beneath its edges. Although this mode of dressing gave place in time to others which were more convenient, the change effected under its use, at that early period, was of the most striking character; healing without suppuration, pain or fever, instead of being the rare exception, became the rule, and operations were safely performed which had previously been utterly prohibited on account of the danger that attended them; while pyæmia and hospital gangrene, which had before been disastrously rife, were banished from my wards.

"Epidermis is a substance for which carbolic acid has special attraction; and this, coupled with the facility with which the acid blends with oily matters, renders it peculiarly fitted for purifying the skin about the seat of operation and the surgeon's hands. Another property which aids its action as a detergent is its great penetrating power, not limited by the products of its chemical action upon organic substances.

"I used the 1 to 20 watery solution for rendering the patient's skin and the hands of myself and my assistants, aseptic, throughout the 40 years during which I practised on the antiseptic principle, and

I never had any reason to doubt its efficacy. No long time is required for its action. In my private practice, the purification of the skin was, as a rule, not begun till I entered the patient's room to perform the operation. The part concerned was then thoroughly washed with the 1 to 20 carbolic solution, and was kept covered with lint soaked with the same lotion, while the instruments were being attended to and the anæsthetic administered, the whole process occupying only about a quarter of an hour. Yet experience showed that this brief period was sufficient.

"It may, perhaps, be argued that under the carbolic putty, or any other dressing containing carbolic acid, that volatile agent was perpetually acting on the skin, and may have made up for deficiencies in the original purification. But during several years, before I gave up practice, the dressings did not owe their virtues to any volatile antiseptic.

"I cannot but think it a happy circumstance that the substance, which I employed first in endeavouring to apply the antiseptic principle, should have been so admirably adapted for detergent purposes. And it has grieved me to learn that many surgeons have been led to substitute, needlessly, protracted and complicated measures for means so simple and efficient.

"As an instance of trouble misapplied in this matter may be mentioned preliminary washing with soap and water. If carbolic acid is the disinfectant used, such washing is not only wholly unnecessary, but is, I believe, positively injurious, as it must tend to check the penetration of the germicide into the substance of the epidermis by saturating it with water for which carbolic acid has so little affinity. That this practice is superfluous is, I venture to think, proved by my experience, as I never in any case adopted it."

"While others," said Sir Hector Cameron, "had attempted by the use of carbolic acid and other antiseptics to lessen the discharge from suppurating surfaces, Lister taught that its beneficial influence,

as he employed it, was entirely due to its germicidal action and its consequent power against the sources of disturbance which existed in the dust of the surrounding air, and in such surfaces and objects as had come in contact with the air. He had long taught that wound inflammation and its consequences, were due to the chemical changes which occurred in the putrefaction of blood and serum, but only began to realise the character of the interaction of wounds without side agencies, after Pasteur had published his researches on fermentations in the early sixties."

The success of his experiments led Lister to apply his principles to a more extended field, and their application was attended with equally good results. Operations were performed with success, which formerly could have ended only in failure, and thus Lister developed his antiseptic system of treatment.

The success of Lister's methods

Antiseptic surgery cannot be said to have been heralded by a single brilliant discovery, but is a process that has developed slowly, step by step only, after careful experiment and long and patient research.

Lister's doctrines were received at first with the greatest scepticism and distrust by the profession. Sir James Simpson and others regarded the theory of atmospheric germs as "mythical fungi," while some compared them to a revival of the belief in the aerial sylphs and spirits of the Rosicrucian philosophers.

Sceptics of Listerism

Meanwhile, other investigators were pursuing experiments on Lister's principles, and at the meeting of the International Medical Congress in 1867, Bourgade suggested a method of dressing wounds after amputation, which he claimed to have employed with considerable success.

It consisted in well sponging and drying the wound, and covering it with pieces of lint dipped in a solution of chloride of iron. This was covered with dry lint, kept in place by adhesive strapping. The year following, Campbell de

Bourgade's method

Morgan advoeated the use of ehloride of zine as a wound dressing, and employed it at the Middlesex Hospital. Among other substanees also suggested and employed at this time were iron sulphate by Monsell, iodine and potassium permanganate by Duval, which were largely employed in Ameriea. Thymic acid was suggested by Paquet, Lewin, and Ranke, and salieylie aeid by Lister, Thierseh, and others. A solution of chloral hydrate was stated to be remarkable for its prompt and healing powers as a dressing in ease of serious wounds, and was largely employed for that purpose in Italy.

Lister appointed Professor of Clinical Surgery at King's College

In the early part of the year 1877, Lister was invited to take up the duties of professor of elinieal surgery in King's College, London, and surgeon to the hospital. When he took up his residenee in London he was still using earbolised gauze, the earbolie spray and oiled silk, but he was ever on the seareh for improvements, and aimed at the simplifieation of his methods and the avoidanee or irritation of the wound by the proeesses employed. When eorrosive sublimate was proved to be a more powerful antiseptie than earbolie aeid he experimented with it largely, and ultimately suggested a dressing of gauze impregnated with the double eyanide of mereury and zine, whieh is still so largely employed. Ultimately, when it was proved that the carbolie spray was ineffeetual as a means of destroying the organisms in dust, Lister deeided to abandon it, and thus the system of asepsis has now developed from Listerism. The results attending the surgeon's efforts to prevent the aeeess of organisms to surgieal wounds have been remarkable, and deaths from sepsis have been diminished to an extraordinary extent. Lister was probably the first to use a dressing sterilised by heat, and was the undoubted originator of many of the prineiples that have been adopted in modern surgery.

Referring to the advent of aseptie surgery, an amusing story is told of a veterinary surgeon in

Yorkshire, who practised over a century ago, and was famed throughout the countryside as a most successful operator. When asked as to his method of treatment, he always evaded the question with great astuteness, and would never give away the secret of his success. At length, when he grew to be a very old man, and became bowed down with age and weight of years, he was again implored by his son to tell him, before he died, what he did in the secret half-hour that he always gave himself before operating. Life was ebbing, when the old man at length whispered, with his passing breath, into his son's ear, "I biles my tools."

A pioneer in sterilisation

Thus, in ignorance and unconscious of the cause, he had achieved his success by the application of the principle on which aseptic surgery has since been based.

Lucas-Championnière once said that there were only two periods in surgery—that before Lister, and that since Lister, and all must admit, in considering the history of the subject, that the line indeed is very marked. Fifty years ago, the idea of a wound was inseparable from that of fever. At the private clinic of a famous surgeon in Germany, 80 per cent. of all wounds, he states, were attacked by hospital gangrene, and erysipelas after an operation was almost considered normal. When we compare this statement with the conditions that prevail at the present time, as instanced in our hospitals, some idea may be conceived of the line dividing these two periods. At the London Hospital, to-day, it is stated that 98 per cent. of the wounds in operations heal by first intention.

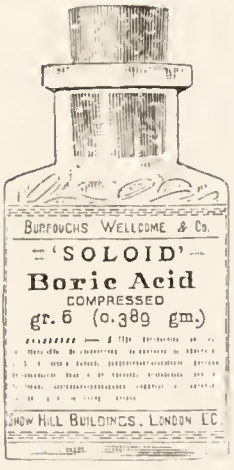
Before Lister and since

Thus, in recapitulating the story of the immortal work done by Pasteur and Lister, it has been shown that the debt humanity owes to the two great minds which evolved the principles on which modern surgery is founded, is one that can never be repaid.

TRADE MARK

'SOLOID' BRAND ANTISEPTICS

Ontogeny is but a brief and rapid recapitulation of phylogeny, and, to be able to grasp facts in the wider application, it is necessary to have a sound knowledge of ontogenic detail.



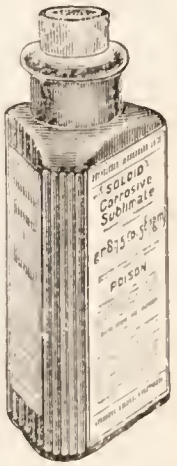
Regular packing of 'Soloid' Products

The previous pages are pregnant with interest, and bear reference to many whose names merit honour from mankind, irrespective of race or country.

Reference has been made to the gradual changes in the methods of applying antiseptics made by Lord Lister himself, from the crude carbolic acid supplied to him by his colleague, Dr. Anderson, the Professor of Chemistry at the University of Glasgow, to the spray, the carbolised gauze, and finally the double cyanide gauze dressing.

Other agencies, quite unobtrusive, yet steady and persevering, have been at work to supply the wants of those workers in the forefront of the battle against septic contamination. Dirt, or at any rate surgical dirt, is now practically unknown in the operating theatre, and the evolution by which the surgeon of to-day has had placed at his command, in the form of the 'SOLOID' Brand Antiseptics, the means of instantaneously preparing solutions of accurate strength and in any required quantity, simply by the addition of water, merits some mention.

Antiseptic Solutions instantly prepared



Specially designed bottle for 'Soloid' products of potent poisons

The word 'SOLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co., and which is applied by them to a special range of products designed to supply portable and reliable antiseptics, astringents and anæsthetics, stains for microscopic work and reagents for the scientific examination of potable waters, sewage or urine, etc.

To procure, at any time, antiseptic solutions suitable for any occasion within the wide range of surgical application,

from the most trifling accident to major operations, it is only necessary to place a suitable 'SOLOID' product in the requisite amount of sterile water, when a solution of the required strength is at hand, as for example, one 'SOLOID' product Corrosive Sublimate, 8·75 gm., dissolved in one pint of water, forms a solution of 1 in 1000.

The 'SOLOID' Brand Products are issued to the medical profession, in small bottles and in tubes, and are of such convenient compactness that ample supplies can be carried in a pocket-case.

The introduction of a specially-shaped bottle in which 'SOLOID' products of the more potent poisons are packed is

not only an admirable safeguard, but is, at the same time, a further advantage in enabling the medical man to pick up the more potent antiseptics by sense of feeling alone.

The poisonous substances are further differentiated by the addition of a harmless colouring matter, the tint of which is also conferred to the solution when made up.

Among, and in addition to, the advantages which the 'SOLOID' products place before the professional man who is particular with regard to his antiseptics, there is a further one, that 'SOLOID' products, however long they may be kept, cannot lose strength nor suffer deterioration such as all solutions are more or less liable to.

Constancy in strength and quality

A momentary mental contrast of the preparation for a surgical case, with the sending on, or ordering of, various bottles of antiseptic fluid, as against the placing of a few 'SOLOID' products in the corner of the instrument bag, is one which merits consideration.

For full list of 'Soloid' Products, see Formulary

In order to ensure the supply of the genuine products

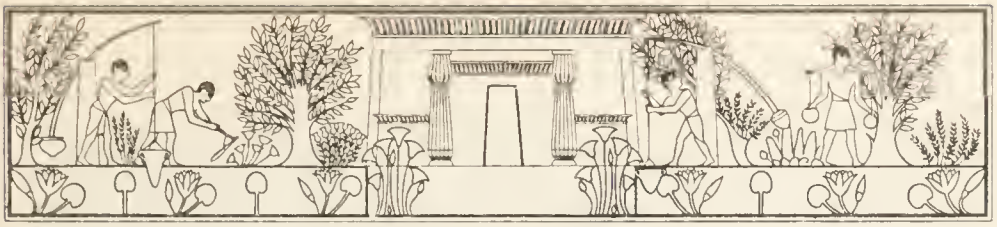
Write the Brand in full, thus: Ry "Soloid"

A Field of Belladonna

Atropa belladonna is grown from genuine wild seed. The best crops of leaves are obtained in the second, third or fourth year of the plant's growth, and it is at this period that the alkaloidal content is greatest.

Loading Belladonna

The yield ranges from 1-1/2 to 5 tons per acre. The freshly-cut herb is weighed in bundles and carried straight to the laboratories in a motor trolley. A portion of the leaves is dried in a few hours in specially-ventilated chambers. The roots, which are collected in the autumn, are sliced in order to accelerate the drying, and so prevent any undesirable change taking place.



Plant Cultivation. From a drawing on an Antient Egyptian Tomb

The 'Wellcome' Materia Medica Farm

The vital importance of standardisation of drugs has always been recognised by Burroughs Wellcome & Co. Constant attention has been devoted to the subject, and the principle has been applied not merely to the chemical, but also to the vegetable and animal substances required for the preparation of the firm's products. The old method of picking samples of drugs by their colour and appearance has long been felt to be inadequate, and it has become necessary to view them in the more penetrating light of chemical analysis and of physiological tests.

Standardisation

Even the most experienced pharmacognoscist may select drugs which, on the basis of form, colour and other physical characteristics, appear to possess a high standard of quality, yet on assay do not yield the requisite percentage of active principles.

In this connection, a paper by Carr and Reynolds, published in the *Chemist and Druggist*, shows in tabular form the very considerable range of variation in the proportion of active principles existing in samples of drugs bought on the market. Amongst the examples given are the following:—

Drug	Lowest percentage	Highest percentage	Active principle determined
Belladonna (dried herb)	0·23	1·08	Total alkaloids
Broom tops	0·07	1·06	Sparteine Sulphate
Cinchona Succirubra	1·06	4·64	Quinine and Cinchonidine
Hydrastis Root	2·3	5·8	Berberine Sulphate
Ipecacuanha Root (Rio)	0·18	1·83	Emetine

Conium Maculatum

A typical bush of *Conium maculatum* (Hemlock). The fresh leaves and branches are collected when the fruit begins to form.

Fresh Belladonna Leaves

about to be expressed for juice and for making the green extract. It is extremely important that this be done promptly to avoid fermentation and consequent deterioration of the product. The fresh herb is gathered as soon as the sun is up, and expressed and treated before sunset.

ACONITE IN FLOWER

Aconitum napellus, when raised from seed, takes two or three years to flower; it is best propagated by dividing the roots: each root is biennial, but, as it has the power of forming new ones every year, the plant itself is perennial.

A FIELD OF DATURA METEL

This handsome plant, which is sometimes known as Egyptian Henbane, is interesting, as recent investigation has shown that it contains Hyoscine, Hyoscyamine and Atropine in proportions differing from those occurring in other solanaceous plants.

GATHERING HYOSCYAMUS

Hyoscyamus niger, one of the most difficult plants with which the herb farmer has to deal, is grown from seed sown about March or April. The young plants show above ground at the end of May or beginning of June. In the autumn they are separated if too close together. In the following May an aerial stem is developed which rapidly grows until it reaches the height of three or four feet. The flowering takes place in June or July, when the crop is harvested.

DIGITALIS IN FLOWER

Digitalis purpurea is obtained from carefully-selected wild seed, and any variations from the wild type are struck out. Great care is taken in collecting and drying the leaves, otherwise the medicinal activity would be adversely affected. Blighted, faded or defective leaves are rejected, and only the finest preserved for use. The chemistry of the active principles of Digitalis is still obscure, and physiological tests are employed in standardising B. W. & Co. preparations of this herb.

It is obvious that the accuracy and care exercised by the pharmacist in weighing and measuring drugs for use in medicine are nullified if the active principles are variable to such an extent.

Expert supervision of growth

With the introduction of the 'Wellcome' Brand standardised galenicals, Burroughs Wellcome & Co. found it necessary, in order to obtain a constant supply of herbs of sufficiently high standard of quality, to grow them under their own immediate supervision. The benefits of conducting a herb farm in conjunction with the preparation of pharmaceutical products are many. For instance :—

(1) A drug may be expressed or worked up immediately it has been collected.

(2) Herbs may be dried, if necessary, directly they are cut, before fermentation and other deteriorative changes have set in.

(3) Freedom from caprice on the part of collectors, who, in gathering wild herbs, are very difficult to control in the matter of adulteration, both accidental and intentional.

(4) The ability to select and cultivate that particular strain of a plant which has been found by chemical and physiological tests to be the most active, and which gives the most satisfactory preparations. Notable instances of these are to be found in connection with Digitalis and Belladonna.

The 'Wellcome' Materia Medica Farm

Fortunately, suitable land was available near the 'Wellcome' Chemical Works at Dartford, and there the 'Wellcome' Materia Medica Farm has been established. The following extracts from a descriptive article which appeared in the *Chemist and Druggist* of January 29, 1910, will give some idea of the nature and scope of this enterprise :—

"A suitable piece of land for 'a physicke garden' (had been chosen) on an undulating slope, with here and there a clump of trees and a strip of wild woodland,

HYDRASTIS CANADENSIS

An experimental crop of Hydrastis, grown under natural conditions, in a grove shaded by hedges and trees.

GOLDEN SEAL

The same plant under the specially-constructed lattice structure, which is designed to ensure the requisite amount of shade.

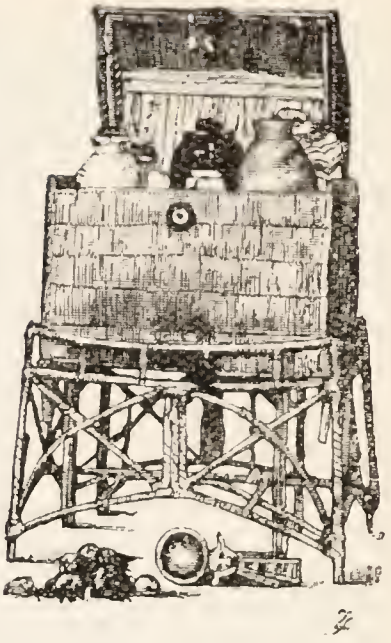
between the river and the North Downs, hard by the little village of Darenth. No more ideal spot for a herb farm could have been chosen. It has shade, sunshine and moisture, and a fine loamy soil, varied by sandier uplands. Here the firm have for the last six years been cultivating medicinal plants under the immediate superintendence of pharmaceutical and botanical experts. The farm was established, firstly, to provide opportunities and materials for research and experiment, and, secondly, to supply the manufacturing departments with medicinal herbs of proper quality.

Research and experiment

"A visit to the farm shows that the greater part is devoted to the cultivation of staples; but a number of plots are used for experimental crops. Among such are meadow saffron *(Colchicum autumnale)*, with its pale-purple flower. Lavender, peppermint, and French roses grow side by side. Senega and the unpretentious taraxacum, with its bright yellow petals, occupy other spaces. Ginseng, the root that plays so important a part in Chinese medicine, is also grown. Podophyllum peltatum, Scopola atropides, Datura metaloides, sea poppy (*Glaucum luteum*), and Grindelia robusta, are other plants that one does not usually find growing on a scale greater than the experimental; but the plots of Hydrastis canadensis are botanically and commercially the most interesting on the farm, in view of the fact that we are coming within measurable distance of the end of the natural supply from North America.

"The purpose which Burroughs Wellcome & Co. had immediately in view when they established this farm, *i.e.* supplying the products of the field direct to their Works, has been fulfilled, and the farm has in that respect passed the experimental stage, since they have experienced the benefits of conducting a farm in conjunction with the production of pharmaceutical preparations. On the research side, experiment goes on, especially in regard to selection and cultivation of strains which have been found by chemical and physiological tests to be the most active."

THE . . . . . MEDICINE CHEST OF QUEEN MENTU-HOTEP WHO LIVED 2200 B.C.



THE massive outer case for the chest is shown below. It is composed of wood, decorated with hieroglyphics, amongst which are the royal cartouche and the figure of a crouching jackal.

The chest itself is depicted above. It is composed of plaited papyrus reeds, and is supported on a stand. The chest is divided into six compartments, each containing a beautifully-shaped medicine jar of oriental alabaster. Various medicinal roots, and a wooden spoon, the handle of which is ornamented with the head of Hathor, were discovered in the chest.

This unique Egyptian medical equipment was discovered at Thebes. It demonstrates the large bulk and cumbersome fittings, combined with paucity of supplies, which have been characteristic of medical outfits from the days of the Pharaohs until the introduction of 'Tabloid' products. The modern medical man armed with a 'Tabloid' brand Pocket-Case carries a scientific therapeutic equipment, the equivalent of which in the drugs of antient Egypt could be transported only by a regiment of slaves.

A Battle Scene. From a drawing on an Antient Egyptian Tomb

Historical Medical Equipments

Some 2000 years or more B.C., the Egyptians, who cultivated the art of Pharmacy, employed medicine chests and large goatskin pouches for storing and carrying drugs in the form of roots, barks, herbs, etc. One of these antient equipments, discovered at Thebes, is illustrated on the opposite page. It is composed of plaited papyrus reeds, and divided into six compartments, each containing an elegant alabaster medicine jar, the whole being enclosed in an outer wooden case of massive proportions and beautiful workmanship. Yet, despite the size of this unique chest, the medical supplies it contained were of the most meagre description.

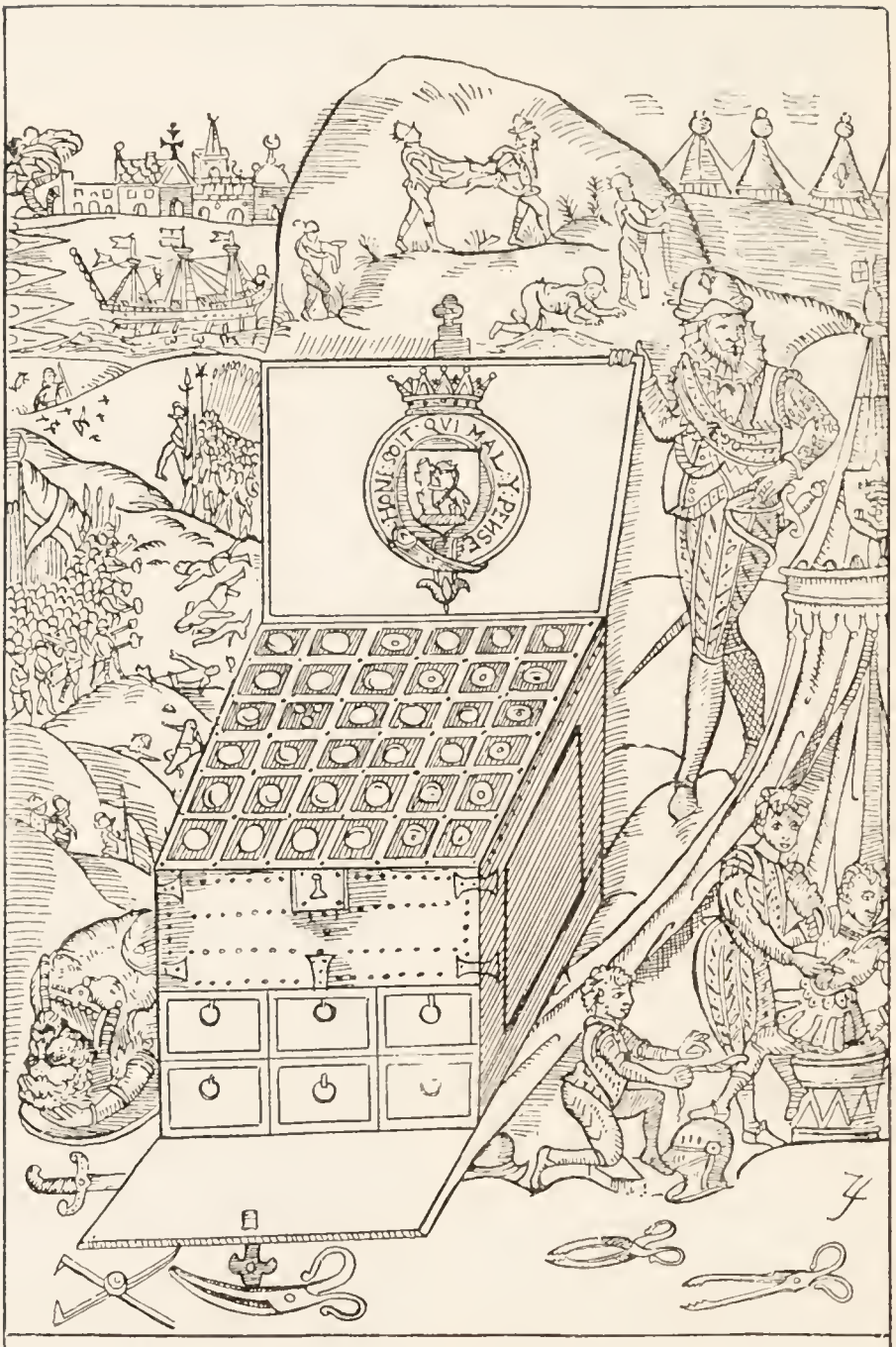
An antient Egyptian equipment

The enormous size and clumsy proportions assumed by the medicine chest in the sixteenth century are well exemplified in the illustration on the following page. Possibly this outfit was used by William Clowes, a celebrated army surgeon who served in the Low Countries, and with the fleet that conquered the Armada.

In Elizabethan times

That the military medical equipments of the seventeenth century were not only cumbersome but expensive to transport, is evident from an entry in the Exchequer MSS., which records that in 1650 each surgeon in the Cromwellian Army was provided with a medicine chest, a horse to draw it, and a man to look after the horse, at a cost equivalent in present-day money to forty-five pounds for the chest, thirty pounds for the horse, and two guineas weekly for the keep of the animal and its attendant.

Cromwell's Army

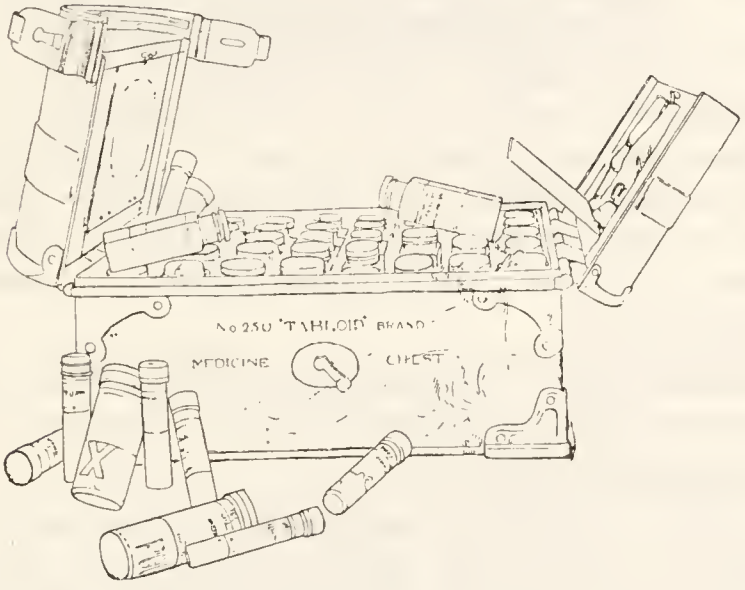


MILITARY MEDICINE CHEST—1588

Fabricius, a noted Swiss physician of the XVI century, recommended that the military chest should be furnished with no less than 362 varieties of medicine, some of which contained as many as 64 ingredients. The complexity of arrangement, the huge bulk and great weight, the liability to breakage, and the complicated inconvenience of medicine chests persisted until the introduction of Tabloid® Medical Equipments

The nineteenth century was approaching its first quarter before the flint-lock of the Commonwealth had given place to the percussion-cap, but, slowly as fire-arms evolved, the weapons for fighting disease in the field progressed even more slowly still. At the time of the Crimean War, owing to the large doses of liquid medicaments employed, medicine chests were still of enormous size and unwieldy form, or, if small, they were furnished with the most meagre supplies. The difficulties presented by transport and by the susceptibility of the medicines then available to climatic influences were practically insuperable, and the horrors of disease and death which resulted from inadequate medical supplies were almost beyond description. Equally terrible were the experiences of the Wolseley Ashanti Expedition of 1873, the medical equipments of which were fitted out according to old-time methods.

Progress extremely slow



One of the 'Tabloid' Brand Medicine Chests used in the Greek Hospitals during the Turco-Grecian War.

With the advent of 'Tabloid' Chests and Cases it was recognised that the dangers and inconveniences associated with inadequate and cumbersome medical equipments could be for ever relegated to the past.

'Tabloid' Medical Equipments in Military Campaigns

Without exception, 'Tabloid' Medical Equipments have been used in all the campaigns of the last twenty-five years, and have played an important part in combating the diseases which seem inseparable from an army in the field.

The Turco-Grecian War, 1897

During and immediately after the Turco-Grecian War, in 1897, many accounts appeared of the 'Tabloid' Equipments used by the British and foreign medical men who had volunteered their services in the cause of humanity. The following report was made by one of the medical officers in charge:—

> When I landed at Nolo to receive and attend the wounded soldiers as they came down from the battlefield of Nelestrino, I found it of inestimable value. The 'Tabloid' Case was the only dispensary I had. All medicines were dispensed by means of the case to the soldiers on the hospital ship, as well as to those afterwards in the English hospital organised at the Piræus. I would mention that I found the 'Soloid' Corrosive Sublimate for making antiseptic solutions especially useful when dressing wounds. In fact, I consider no expedition would be complete without a supply of 'Tabloid' Medicines, whether it be in the 'Tabloid' Cases or Emergency Dispensing Belts.

'Tabloid' Case the only dispensary

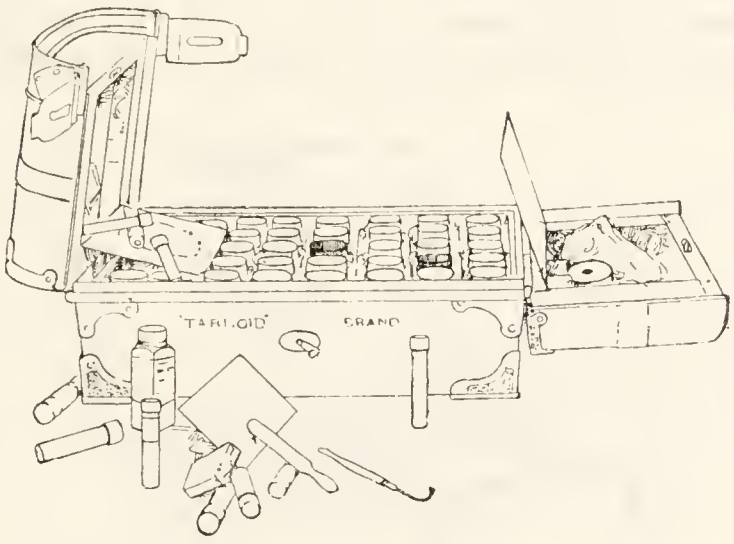
A medical officer who served as Special War Correspondent to the *Lancet* through many campaigns, makes the following report:—

> It affords me infinite satisfaction to state that I have myself for some years dispensed, and have also seen administered by medical officers of both Naval and Military Services, Burroughs Wellcome & Co.'s 'Tabloid' preparations during the Sudan, Ashanti, Benin, and recent South African Campaigns. I cannot refrain from expressing my opinions as to their distinct and marked superiority over the medicinal preparations of former days. They are far more portable, very acceptable so far as the palate is concerned, far less liable to absorb

Sudan, Ashanti, Benin, South Africa

damp on service during rapid changes of climate, are always found exact as to their dose-weight, and, what is of far more importance, retain their efficiency much longer than any other medicinal products I know of.

Scales and weights can be dispensed with, and much valuable time is saved both to patient and doctor, as the dispensary—*multum in parvo*, in fact—can be carried by the prescriber in his hand, or in front of him on cycle or horse. During my recent experience amongst the goldfields of Ashanti, W. A., under conditions the most severe and trying, these 'Tabloid' Medicines could always be depended upon. The firm of Burroughs Wellcome & Co. are deservedly to be congratulated upon the marked scientific advance they have made in pharmaceutical reform.



One of the 'Tabloid' Brand Medicine Chests used during the Ashanti Campaign, 1895-6.

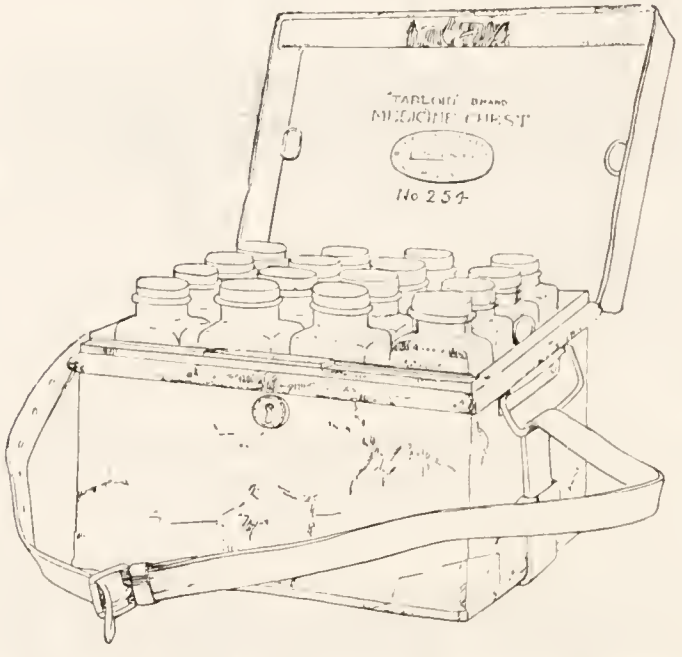
During the Chitral and Indian frontier campaigns, the utility of 'Tabloid' Medical Equipments was further demonstrated, and the following extract from the Official Government Report made by the Chief Medical Officer of the last British Military Expedition to Ashanti, West Africa, is a striking testimony to their value for military purposes.

The supply of medicines, both as to quality and quantity, left nothing to be desired. There was no scarcity of anything. The 'Tabloid' medicines were found to be most

convenient and of excellent quality. To be able to take out at once the required dose of any medicine without having to weigh or measure it, is a convenience that cannot be expressed in words. Time is saved to an extent that can hardly be realised, and so is space, for a fitted dispensary, or even a dispensary table, is unnecessary. The quality of medicines was so good that no other should be taken into the field. The cases supplied are almost ideal ones for the Government. They are light yet strong, and the arrangement of the materials and medicines is as nearly perfect as possible.

West Africa

The medical equipment for the Niger-Sudan Campaign of 1896–7 was also supplied by Burroughs Wellcome & Co. Reports by an expeditionary officer to the Royal Niger Company, which were published in the *Lancet* of February, 1898, speak unreservedly of the immense advantages of 'Tabloid' Equipments.



The late G. W. Steevens' 'Tabloid' Brand Medicine Chest

During the war with Spain, in Cuba and subsequently in the Philippines, the utility of 'Tabloid' Medical Equipments was again tested and confirmed. In the Anglo-Egyptian campaign in the Sudan, which culminated in the complete overthrow of Dervish rule and the death

Cuba, Philippines, Sudan

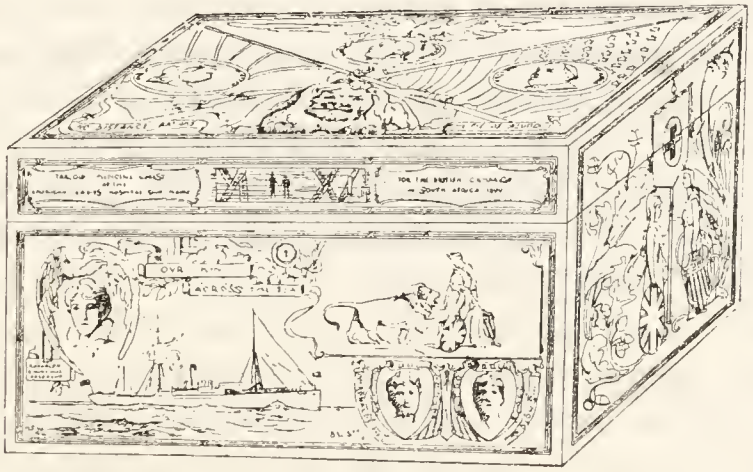
of the Mahdi, 'Tabloid' Equipments were largely employed, and highly appreciated in the triumphant march "with Kitchener to Khartoum."

The conclusive proofs afforded by all these campaigns and expeditions of the incomparable utility of the B. W. & Co. equipments, under circumstances of the most trying nature, naturally led to their still more extensive employment in South Africa during the recent war. The trying conditions of transport and the climatic influences were just such as 'Tabloid' Equipments, and 'Tabloid' Equipments only, had been proved, by earlier experience, to be capable of resisting. Constant references were made to the adequacy and efficiency of the equipments supplied.

Hospital Ships and Army Hospitals

Equipment of the Hospital Ship "Maine"

'Tabloid' Cases and products were carried by H.R.H. The Princess of Wales' Hospital Ship, by H.R.H. Princess Christian's Hospital Train, and by the Hospital Ships *Trojan* and *Spartan*, whilst the *entire* medical equipment of the American Ladies' Hospital Ship *Maine* was supplied by Burroughs Wellcome & Co.



One of the 'Tabloid' Brand Medicine Chests specially designed for and supplied to, the Hospital Ship *Maine*.

Referring to this equipment, the *Lancet* (London. Eng.) reported:—

> The whole of the medical outfit has been supplied by Messrs. Burroughs Wellcome & Co. One of the medicine chests supplied by this firm is in tooled leather, designed by Mr. Henry S. Wellcome.

The following description of this chest may be of interest:—

The chest is made of oak covered with Carthaginian cowhide, tooled by hand, with chaste designs successfully representing in allegory the alliance of Great Britain and America in the succour of the wounded. On the top panel appear the Union Jack and the Stars and Stripes entwined, portraits of Queen Victoria, George Washington and President McKinley; also representations of the British Lion and American Eagle. The front panel bears portraits of Lady Randolph Churchill (Mrs. George Cornwallis-West), the hon. secretary and the hon. treasurer of the fund; a picture of the ship itself; and a scene representing the British Lion, wounded by an arrow which lies at his side, being ministered to by Britannia and Columbia. A frieze is formed by a representation of an American Indian wampum, upon which Brother Jonathan and John Bull are depicted hand-in-hand. The panel at each end of the chest represents Britannia and Columbia supporting a banner bearing the Red Cross, and on the panel at the back the British Regular and Colonial Lancers are shown charging a Boer force. Keble's line, "No distance breaks the tie of blood," and Bayard's phrase, "Our kin across the sea," are inscribed on the chest. This beautiful cabinet contains a number of smaller cases fitted with 'Tabloid' and 'Soloid' products and 'Tabloid' Hypodermic Outfits, and is in itself a compact and complete dispensary.

In addition to the 'Tabloid' outfits supplied to the hospital ships, army hospitals and regular field service, saddle-cases fitted with 'Tabloid' and 'Soloid' products were supplied to the medical officers of the Yeomanry

Battalions and to those attached to the Colonial contingents.

'Tabloid' Medicine Pocket-Cases were carried for private use by numerous officers, war correspondents and others.

One of the 'Tabloid' Brand Medicine Cases specially designed for, and supplied to, the troops from the various British Colonies, for use in the South African Campaign.

These few of the many instances of the employment of 'Tabloid' equipments during the Boer War bring the history of medical equipment down to recent times. Yet the subject has been outlined only, and these examples are but links in the association of modern medical equipments with 'Tabloid' outfits. In frontier campaigns and punitive expeditions against savage and half-civilised tribes, and in the great wars of modern times—in fact, whenever it has been recognised that the success of the expedition and the lives and health of its members must depend on the portability, accuracy of dosage and keeping qualities of the drugs to be used, 'Tabloid' equipments have been chosen, and have been invariably found to fulfil every requirement.

World-wide use of 'Tabloid' medical equipments

'Tabloid' Medical Equipments in Exploring Expeditions

Having briefly outlined the history of medical supplies in military campaigns, it may be of interest

to review the methods adopted by the leading explorers in their fight against the terrors of disease. Furnished with old-time equipments, the early explorers of Africa were doomed to undergo the usual heartrending experiences.

Tuckey, Burton, and Speke

When I think [said the late Sir H. M. STANLEY, in the course of one of his lectures] of the dreadful mortality of Capt. TUCKEY'S Expedition in 1816, of the NIGER Expedition in 1841, of the sufferings of BURTON and SPEKE, and of my own first two expeditions, I am amazed to find that much of the mortality and sickness was due to the crude way in which medicines were supplied to travellers. The very recollection causes me to shudder.

But a new power was placed in the hands of the explorer. Scientific knowledge, skill and ingenuity had forged a new and potent weapon to fight the ravages of disease. The marked improvement which occurred is seen when we turn to a later speech by the same great explorer, in which he said:—

Stanley's experiences

In my early expeditions into Africa, there was one secret wish which endured with me always, and that was to ameliorate the miseries of African explorers. How it was to be done, who was to do it, I knew not. But I made the acquaintance of Messrs. BURROUGHS WELLCOME & Co. As soon as I came in sight of their preparations and their works, I found the consummation of my secret wish. On my later expeditions I had all the medicines that were required for my black men, as well as my white men, beautifully prepared, and in most elegant fashion arranged in the smallest medicine chest it was ever my lot to carry into Africa.

In his books, *Founding the Congo Free State* and *In Darkest Africa*, the late Sir H. M. STANLEY wrote in the very highest terms of 'Tabloid' Medical Equipments.

The late Surgeon-Major PARKE, Stanley's Medical Officer, in his *Guide to Health in Africa*, writes:—

"None can compare"

> The medicinal preparations which I have throughout recommended are those of BURROUGHS WELLCOME & Co., as I have found, after a varied experience of the different forms in which drugs are prepared for foreign use, that there are none which can compare with them ['Tabloid' products] for convenience of portability in transit, and for unfailing reliability in strength of dose after prolonged exposure.

One of the 'TABLOID' BRAND MEDICINE CHESTS carried by Sir H. M. STANLEY throughout the Emin Relief Expedition, and brought back as a souvenir, with the remaining contents unimpaired.

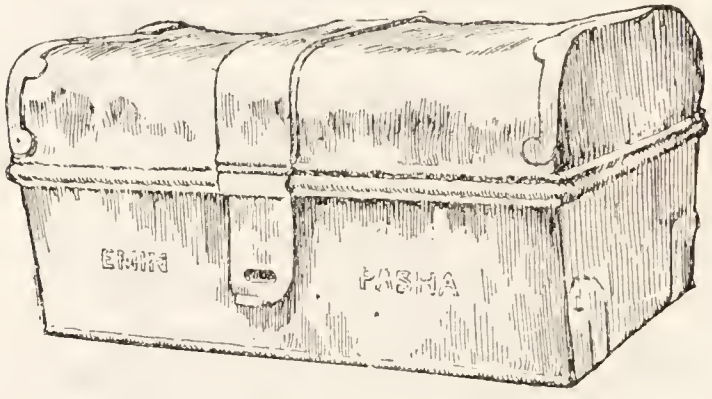
Contents tested by the "Lancet"

Amongst other cases used during STANLEY's travels, is the famous "Rear-Guard" 'Tabloid' Medicine Chest, which remained in the swampy forest regions of the Aruwhimi for nearly four years, and was more than once actually submerged in the river. When it was brought back to London, the remaining contents were tested by the official analyst of the *Lancet*, who reported that the 'Tabloid' medicaments had perfectly preserved their efficacy.

At this point it is of interest to turn to the 'Tabloid' Medicine Chest *(illustrated on next page)* which was

discovered near Kenia, in the Aruwhimi Dwarf Country. It was the last chest supplied to EMIN PASHA, GORDON'S Governor of the Equatorial Sudan. This chest was taken by Arabs when EMIN PASHA was massacred in 1892, and was recaptured by BARON DHANIS, Commandant of the Congo Free State troops, after the battle of Kasongo. It was subsequently stolen by natives, and finally recovered by an officer of the Congo Free State, and returned to BURROUGHS WELLCOME & Co.

Emin Pasha



EMIN PASHA'S 'TABLOID' BRAND MEDICINE CHEST

The following acknowledgment of its receipt was sent by Emin Pasha before setting out on his final expedition to Central Africa:—

Gentlemen,—I found the medicine chest you forwarded me fully stocked. I need not tell you that its very completeness made bound my heart. Articles like those could not be made but at the hand of the greatest artists in their own department. If any one relieved from intense pain pours out his blessings, they will come home to you.

I should like to expatiate somewhat longer on the intrinsical value, but sickness preventing me to do so. I wish you to believe me,

Yours very faithfully

Dr Emin Pasha

Messrs. BURROUGHS WELLCOME & Co.

A history of all the 'Tabloid' Medical Equipments associated with African exploration and African campaigns would of itself make a large volume, and it has only been possible to mention briefly a few instances of their use.

These are, after all, but a few types, although extremely interesting ones, of the great number of 'Tabloid' Chests and Cases which have been, or are at the present time, connected with the march of humanity and civilisation throughout the Dark Continent.

Sir Sven Hedin, the well-known explorer of Tibet, whose recently published accounts of his penetration into the innermost precincts of the mysterious monastery of Tashi-lunpo have attracted world-wide attention, refers in the highest terms to the utility, compactness and completeness of the No. 251 'Tabloid' Medicine Chest with which he was equipped by Burroughs Wellcome & Co.

He reports that this outfit was—

> A tasteful and elegant work of art, and contained drugs selected for a high, cold and dry climate, and adds: All the drugs were in 'Tabloid' form, well and orderly packed.
>
> The whole was carefully stowed in a pretty aluminium chest which shone like silver.
>
> It contained the best portable outfit I have ever seen.
>
> Stanley, Emin Pasha, Jackson, Scott and many other travellers have prized this ideal travelling dispensary as highly as myself.

(Extracts from Sir Sven Hedin's *Trans-Himalaya*, by kind permission of Messrs. Macmillan & Co.)

The destination of this 'Tabloid' Chest is unique in the history of medical equipments. After having effectually fulfilled the medical requirements of the Expedition, it was presented by Sir Sven Hedin to the Tashi Lama, the Pontiff of Tibet, in whom it excited the greatest admiration and the liveliest interest.

ONE OF THE 'TABLOID' MEDICINE CHESTS
USED BY COMMANDER R. E. PEARY

Commander PEARY, to whose record stands the achievement of having reached the North Pole, writing from Etah, Greenland, reports :—

> BURROUGHS WELLCOME & Co. 'Tabloid' Medicine Cases and Supplies have proven invaluable.

TRADE MARK 'TABLOID' BRAND

MEDICAL EQUIPMENTS

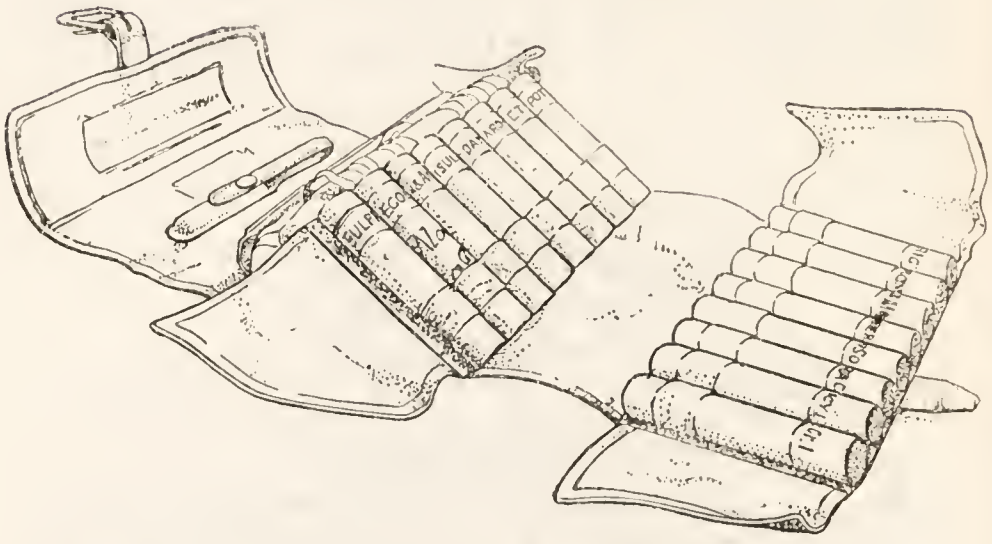
IN ARCTIC AND ANTARCTIC EXPLORATION

NORTH POLE

SOUTH POLE

'TABLOID' MEDICAL EQUIPMENTS have reached the North Pole and as near to the South Pole as man has gone.

THE 'TABLOID' MEDICINE CASE CARRIED "FARTHEST SOUTH" BY SIR ERNEST H. SHACKLETON



The full record of this case, as given in the report from the Surgeon to the Expedition, is printed below.

Copy of Report dated Sept. 17, 1909 :—

The B. W. & Co. Brown Leather 'Tabloid' Case herewith was :

Taken with party of six that made the ascent and reached summit of Mount Erebus, 13,350 ft., March 5th–11th, 1908.

Used on Southern Journey under Lieut. Shackleton *Oct. 28th, 1908–March 4th, 1909.
Latitude 88° 23′ S. Longitude 162° E.
Distance covered in this journey, 1728 statute miles.

Used on S. Depot Laying Party, from Sept. 20th to Oct. 15th, 1908. Distance covered, 311 miles.

Taken on Depot journeys to Hut Point.
Aggregating 150 statute miles.

Medicines quite satisfactory.

Signed

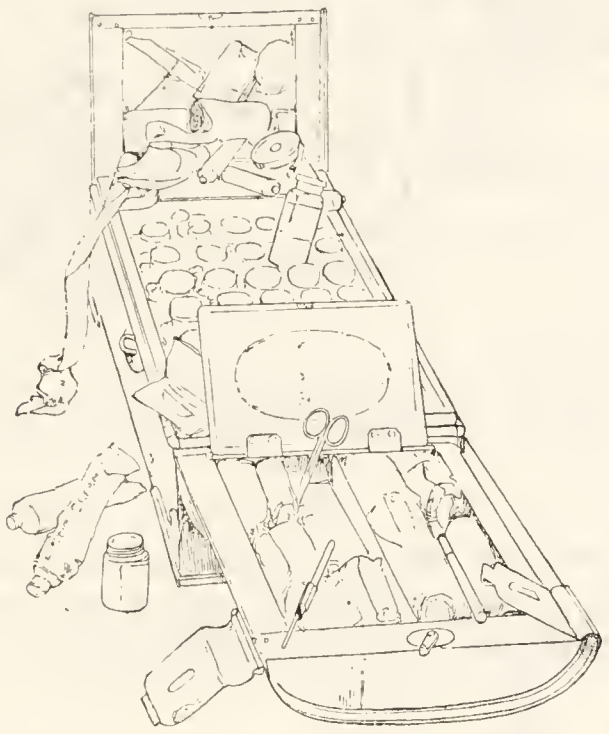
E. P. MARSHALL, M.R.C.S., L.R.C.P.

Surgeon to the British Antarctic Expedition, 1907-9

* Reached "Farthest South," Jan. 9th, 1909

'Tabloid' Medical Equipments in Arctic and Antarctic Exploration

'Tabloid' Medical Equipments have been used with remarkable success in the Arctic and Antarctic expeditions associated with the names of Nansen, Peary, Jackson-Harmsworth, the Duke of the Abruzzi, and Shackleton. The belts and other 'Tabloid' Equipments supplied to Nansen for his journey



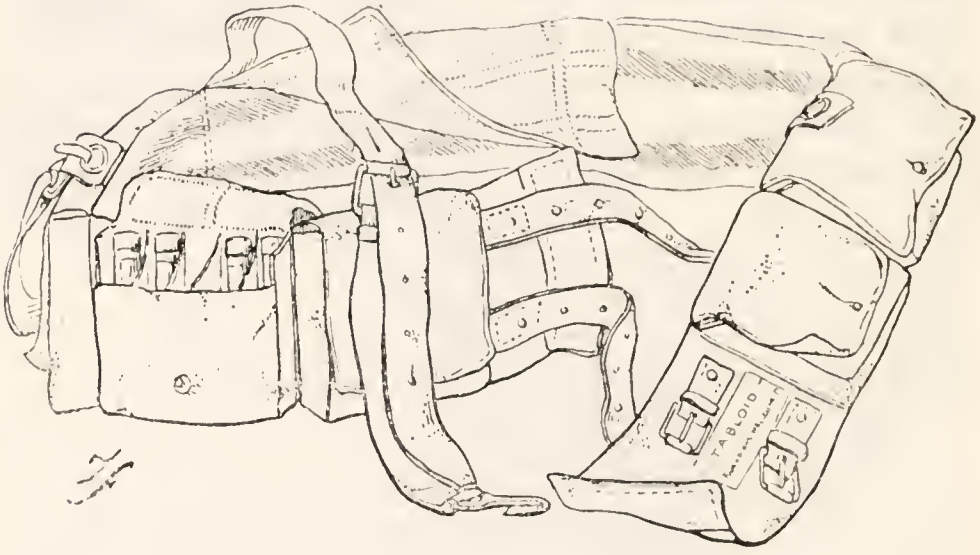
One of the 'Tabloid' Brand Chests used by the Jackson-Harmsworth Polar Expedition.

"Farthest North," and those used by the Jackson-Harmsworth Arctic Expedition, are now added to Burroughs Wellcome & Co.'s collection of historic outfits. In his report, the surgeon to the latter expedition says:—

> I find that the 'Tabloid' drugs are most convenient, especially in circumstances such as we are placed in.

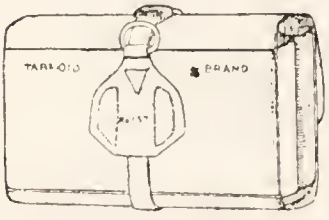
Another 'Tabloid' Medical Equipment of exceptional interest was that supplied to Commander R. E. Peary for use with his former Arctic Expedition.

The 'Tabloid' Belts and other Medical Equipments supplied to NANSEN for his journey in the *Fram*,



One of the 'TABLOID' BRAND MEDICINE BELTS carried by NANSEN on his Arctic Expedition.

and those used by the JACKSON-HARMSWORTH ARCTIC EXPEDITION, have also been added to the historic collection of BURROUGHS WELLCOME & CO.



One of the 'TABLOID' BRAND MEDICINE CASES carried by the DUKE OF THE ABRUZZI'S Polar Expedition.

The ITALIAN ARCTIC EXPEDITION, commanded by the DUKE OF THE ABRUZZI, found that, despite the fact that the northern latitude of 86° 33′ 49″ was reached, the 'Tabloid' Medicine Chests and Cases with which the Expedition was equipped were brought back with their remaining contents quite unaffected by the rigour of the climate.

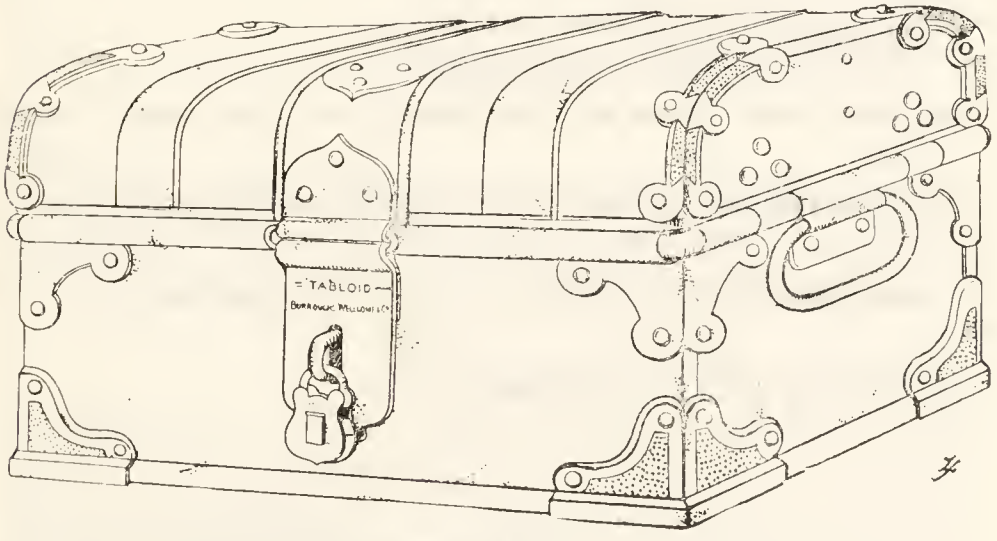
Unaffected by climate

The National Antarctic Expedition

The entire medical outfit of the National Antarctic Expedition was furnished by Burroughs Wellcome & Co., and on the return of the *Discovery*, with the members of the Expedition on board, the medical officer made a highly satisfactory report on the 'Tabloid' Medical Equipment.

In August, 1901, the *Discovery* left England, and in the following January crossed the limit of the Antarctic Circle. Having passed the farthest eastward point attained by Ross sixty years before, the explorers discovered a new land, which they named King Edward VII. Land. One of the most noteworthy features of the Expedition was the arduous sledge journey undertaken by the commander, Captain Scott, accompanied by Lieutenant Shackleton and Dr. Wilson. This journey over the ice occupied three months, and the record latitude of 82° 17′ South was reached. On sledge journeys the question of weight is of great

"Discovery" Expedition



One of the 'Tabloid' Brand Medicine Chests carried by the National Antarctic Expedition

moment. The traveller, on such occasions, must carry but the barest necessaries, and of these the lightest procurable. The medicine chest is an important item,

for upon the efficacy of its contents the lives of the explorers may depend. Every drug carried must be of the utmost reliability, in the most compact state, and capable of withstanding an extremely low temperature.

To the enthusiasm of Sir CLEMENTS MARKHAM, K.C.B., then President of the Royal Geographical Society, the successful organisation of the Expedition is largely due. Referring to the 'Tabloid' Medical Equipment of the *Discovery*, he reports:—

National Antarctic Expedition,
1, Savile Row,
Burlington Gardens, W.

The Medical Equipment of the Exploring Ship of the National Antarctic Expedition was entirely supplied by Messrs Burroughs, Wellcome & Co., and, proved in every way most satisfactory.

The few other drugs and preparations which were taken with the Expedition were only supplied for purposes of experiment, and, can in no way be regarded as part of the medical equipment.

Clements R Markham

27 April 1905

Dr. Kœttlitz, the Senior Medical Officer to the Expedition, reports:—

Discovery Antarctic Expedition

The Medical Equipment of the *Discovery* Exploring Ship, of the National Antarctic Expedition, was entirely supplied by Messrs. Burroughs Wellcome & Co., mostly in the form of 'Tabloid,' 'Soloid' and 'Enule' preparations.

The preparations proved, in every way, most satisfactory, and there was no deterioration of any of them, in spite of the conditions of climate and temperature to which they were exposed. The few other drugs and preparations which were taken with the Expedition were only taken for purposes of experiment.

The cases supplied by Burroughs Wellcome & Co. to us have also been found satisfactory; the small leather one was very useful upon sledge journeys, being light and compact. The No. 251 'Tabloid' Case was used for some weeks at the camp eleven miles north of the ship, when the whole ship's company was engaged in sawing and blasting the ice, and it was found very convenient.

The other cases were useful in our cabins, etc., for a handy supply.

Reginald Koettlitz

The relief ship *Morning* was also provided with a 'Tabloid' Medical Equipment, and the Medical Officer, Dr. George Davidson, sends the following report:—

Antarctic Relief Ship *Morning*

I wish very heartily to express my perfect satisfaction with the medical equipment which was supplied to the Antarctic Relief Ship *Morning* by Burroughs Wellcome & Co. When I say that it was compact, yet complete, that everything was just to hand, that during a period of two years and three months I was never at a loss to find just the medicine I wanted, and that without delay, I need say no more to emphasise the extraordinary convenience which a 'Tabloid' and 'Soloid' outfit is to a ship such as ours, whether at

sea or in the ice. I found the 'Tabloid' and 'Soloid' products to remain unchanged throughout the whole period of my commission, and to equal in efficacy the best medical preparations I have yet had occasion to use. It is impossible to realise without experience how much can be condensed by this mode of exhibition in a very small space. I strongly advise all intending explorers to betake themselves to Burroughs Wellcome & Co. for their medical equipment, and they will not be disappointed.

George A. Davidson

From Dr. EDWARD WILSON, who was in charge of some of the sledge journeys from the *Discovery*, the following report has been received :—

Discovery ANTARCTIC EXPEDITION

Though there was but little serious illness on the *Discovery* during the recent Antarctic Expedition, the 'Tabloid' preparations and the cases were put to a fairly rigorous test, not only in the ship, but on the various sledge journeys that were undertaken, during which they experienced temperatures as low as 68° below zero, and much rough handling, without any loss in efficiency and usefulness. Certain of the 'Tabloid' Ophthalmics were freely used for snow blindness, and were found to be most convenient.

Edward A. Wilson.

The Scottish National Antarctic Expedition, covering a period of nearly two years, and comprising two separate voyages of the *Scotia*, was brought to a very satisfactory termination. To the *Scotia* belongs the distinction of having attained the latitude of 74° 1′ South. BURROUGHS WELLCOME & Co. supplied the entire medical equipment, which gave the utmost satisfaction, and were very favourably reported on by Dr. J. H. HARVEY PIRIE, the Medical Officer of the *Scotia*.

In each instance the medicine chests were brought back, and the remaining contents were found to have retained their therapeutic activity, notwithstanding the rigour of the climate to which they had been subjected.

Sir Ernest H. Shackleton, on his memorable voyage with the *Nimrod*, when he penetrated to within ninety-seven miles of the South Pole, took with him as his sole medical equipment 'Tabloid' Medicine Chests and Cases, and the subjoined reports show that under the trying and difficult conditions of Antarctic exploration 'Tabloid' medicines maintained their reputation for efficiency and stability.

Copy of Report dated Sept. 17, 1909 :—

The British Antarctic Expedition, 1907–9, was equipped with a very complete Medical Equipment contracted for solely by Messrs. Burroughs Wellcome & Co., and consisting of 'Soloid' and 'Tabloid' Preparations, which are the only forms that can be conveniently carried and preserved under such conditions.

The packets of Compressed Dressings are an extremely convenient form.

The Congo Cases (No. 251, 'Tabloid' Brand) were always used when at our base, and both the party of three who reached the South Magnetic Pole, and the party under Lieut. Shackleton, who attained a point 97 miles from the Geographical South Pole, carried a brown leather 'Tabloid' Case, and all the 'Tabloid' products that remain are now in as good condition as when first handed over to my care two years ago.

The *Nimrod* was also supplied with 'Tabloid' Cases and Equipment.

The 'Tabloid' Photographic Outfit supplied by Burroughs Wellcome & Co. proved entirely satisfactory.

Signed

British Antarctic Expedition, 1907–9

Ernest H. Shackleton

Commander

Eric P. Marshall, M.R.C.S., L.R.C.P.

Surgeon to the Expedition

S.S. "NIMROD"

BRITISH ANTARCTIC EXPEDITION, 1907-9

The entire medical equipment of this Expedition was furnished by Burroughs Wellcome & Co.

HYPODERMIC POCKET-CASES
'TABLOID' BRAND
[SEE LIST B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

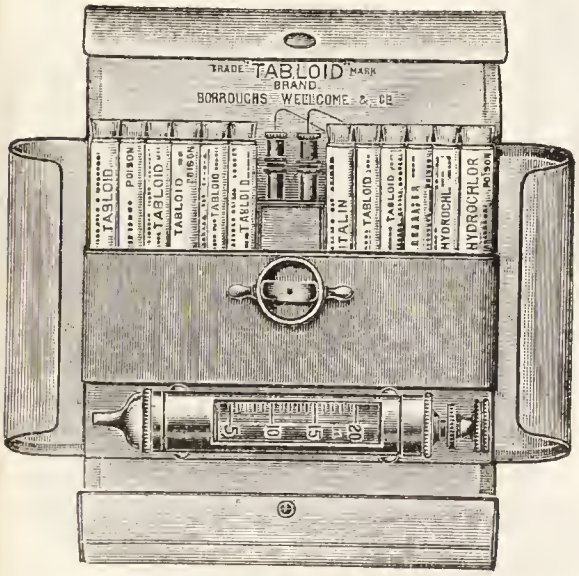
The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'Tabloid' Hypodermic Pocket-Cases provide complete armamentaria for hypodermic work. Primarily intended for emergency purposes, such essentials as compactness and convenience in use have received the fullest attention, and with unique result. A full equipment of hypodermic drugs of utmost reliability and accuracy of dosage, together with syringe and needles, may, by means of a 'Tabloid' Hypodermic Outfit, be carried easily in the waistcoat-pocket.

For the waistcoat-pocket

Hypodermic 'Tabloid' Brand Pocket-Cases are issued in gold, silver, gun-metal, nickel-plated metal, or aluminium, and in a great variety of fancy leathers. Each contains a B. W. & Co. Hypodermic Syringe with needles, and from five to fifteen tubes of 'Tabloid' Brand Hypodermic products, etc.

NO. 3. HYPODERMIC 'TABLOID' BRAND POCKET-CASE



In Cowhide, Pigskin, Crocodile, Morocco, Seal and other fine leathers. Fitted with twelve tubes of 'Tabloid' Hypodermic products, B. W. & Co. patent nickel-plated hypodermic syringe, and two regular steel needles.

NO. 3. HYPODERMIC 'TABLOID' BRAND POCKET-CASE

Measurements : $3\frac{1}{4} \times 2\frac{3}{4} \times \frac{5}{8}$ in.

No. 7. Hypodermic 'Tabloid' Brand Pocket-Case

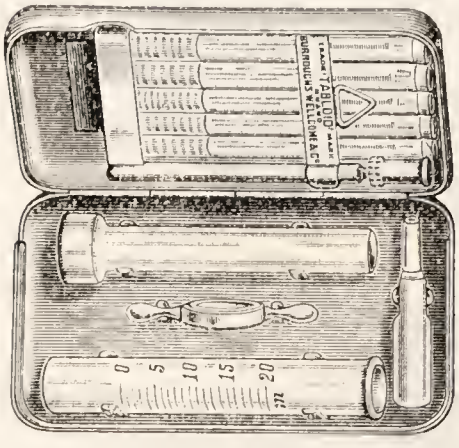
No. 7. Hypodermic 'Tabloid' Brand Pocket-Case

Measurements: $3\frac{1}{2} \times 3\frac{1}{8} \times \frac{7}{8}$ in.

With special detachable aseptic frame of novel design, and revolving rack (nickel-plated). Fitted with twelve tubes of 'Tabloid' Hypodermic products, a B. W. & Co. patent nickel-plated syringe, one exploring and two regular steel needles. This Case, after the removal of the tubes of Hypodermic products, may be sterilised with ease. In Gun-metal, Aluminium, or Silver.

No. 10. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case

This Case is a model of compact completeness. It is made of nickel-plated metal, each edge and corner being smoothly rounded. It contains the B. W. & Co. All-Glass Aseptic Hypodermic Syringe, with detachable nickel-plated finger-grip, and two regular steel needles enclosed in a protective tube. Each part of the syringe is separately held in a holdfast clip.



No. 10. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case

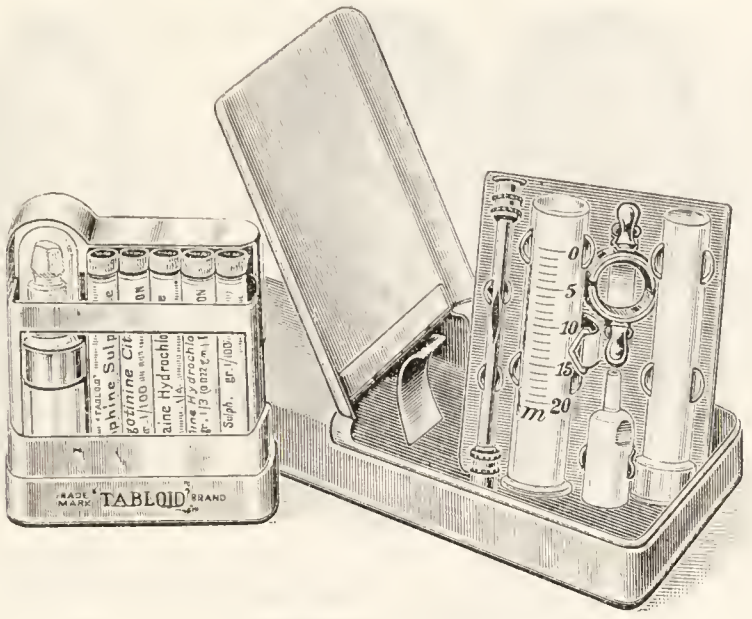
Measurements: $2\frac{1}{2} \times 1\frac{3}{8} \times \frac{7}{8}$ in.

The tubes of 'Tabloid' Hypodermic products, five in number, are carried in a hinged rack, which securely holds them when the case is closed, and which, when swung outwards, allows of the easy withdrawal of the desired tube. Complete with doeskin cover.

No. 20. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case

Fitted with ten tubes of 'Tabloid' Hypodermic products, a small glass phial, stoppered and capped, for ether. B. W. & Co. All-Glass

Hypodermic Syringe (each part securely held by a separate clip), with two steel needles, finger grip, etc. In nickel-plated metal, complete with doeskin cover.

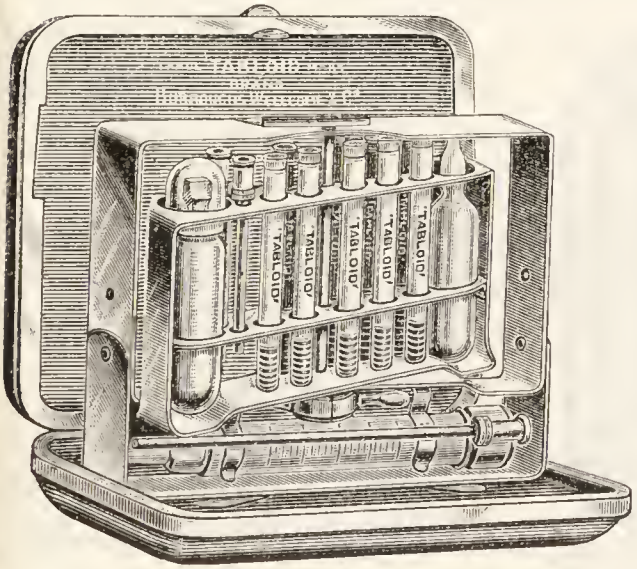


No. 20. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case
Measurements: $4\frac{1}{2} \times 1\frac{3}{4} \times \frac{3}{4}$ in.

No. 21. Hypodermic 'Tabloid' Brand Pocket-Case

Measurements: $4 \times 3\frac{1}{8} \times 1\frac{1}{4}$ in. Fitted with nine tubes of 'Tabloid' Hypodermic products, a B. W. & Co. patent nickel-plated hypodermic syringe with two steel needles, a small phial, glass-stoppered and capped, for sterilised water, capsule of ether, etc. In Morocco and other fine leathers.

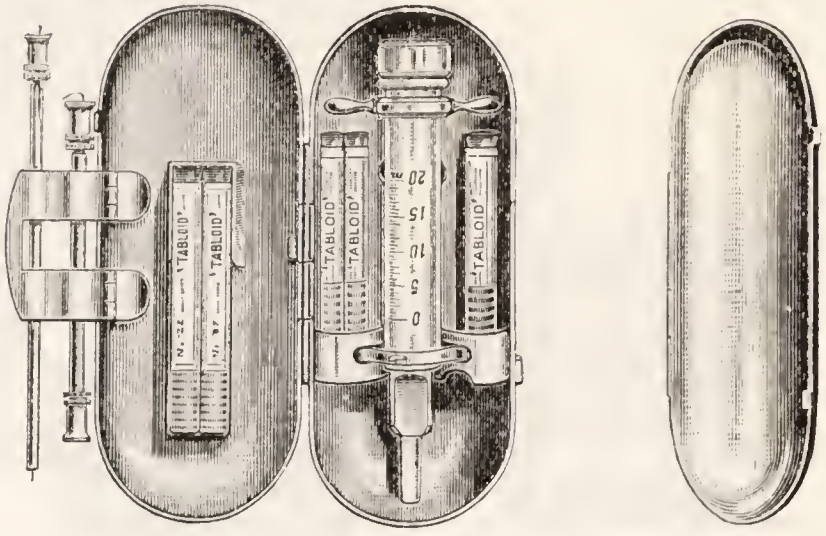
No. 23. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case



No. 23. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case
Measurements: $3\frac{1}{2} \times 3\frac{1}{8} \times \frac{7}{8}$ in.

In Aluminium or Gun-metal, with special detachable nickel-plated aseptic frame and revolving rack. Contents same as those of No. 21 Case, with the addition of a steel exploring needle. This Case, after the removal of the tubes of 'Tabloid' Hypodermic products, may be sterilised with ease.

No. 32. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case *(The Mussel Shell)*



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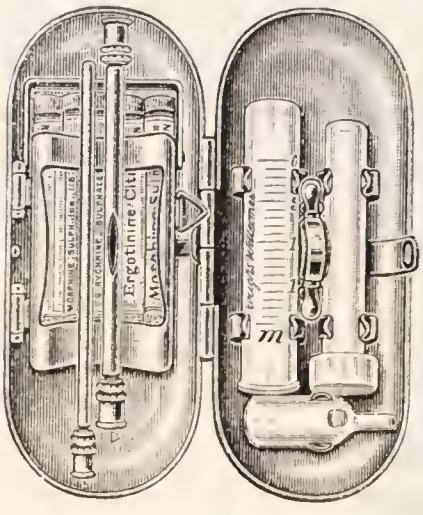
No. 32. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case *(The Mussel Shell)*

Measurements: $3\frac{1}{2} \times 1\frac{3}{8} \times \frac{3}{4}$ in

Made of nickel-plated metal, occupies very little space, and is conveniently shaped for the pocket. Fitted with nickel-plated hypodermic syringe, one exploring and two regular steel needles, and five tubes of 'Tabloid' Hypodermic products. This Case is also supplied fitted with a B. W. & Co. All-Glass Aseptic Hypodermic Syringe, etc. *(as illustrated)*, but *without* 'Tabloid' Hypodermic Products. Complete with leather or doeskin cover.

No. 40. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case *(The Mussel Shell)*



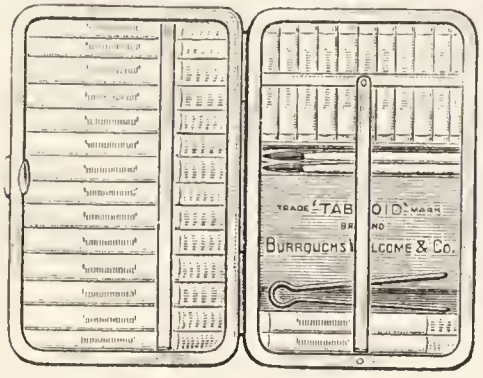
No. 40. Aseptic Hypodermic 'Tabloid' Brand Pocket-Case *(Mussel Shell).*

Measurements: $3\frac{1}{2} \times 1\frac{3}{8} \times \frac{3}{4}$ in.

A particularly efficient and convenient pocket-case. The component parts are held securely in clips and rack. The spring catch is of improved design and most effective in use. Maximum security is thus attained. The case contains a B. W. & Co. All-Glass Hypodermic Syringe, with detachable finger-grip, two regular steel needles, one exploring needle, and five tubes of 'Tabloid' Hypodermic products, etc. In nickel-plated metal, complete with doeskin cover.

HYPODERMIC & OPHTHALMIC POCKET-CASES 'TABLOID' BRAND [SEE LIST B. W. & Co.]

NO. 80. HYPODERMIC AND OPHTHALMIC 'TABLOID' BRAND POCKET-CASE *(The "British Army Regulation")*



NO. 80. HYPODERMIC AND OPHTHALMIC 'TABLOID' BRAND POCKET-CASE *(The "British Army Regulation")*
Measurements: $3\frac{1}{4} \times 2\frac{1}{4} \times \frac{3}{4}$ in.

In Aluminium. Contains thirteen tubes of 'Tabloid' Hypodermic products, ten tubes of 'Tabloid' Ophthalmic products, two camel-hair brushes, a pair of minute forceps, and a booklet giving a summary of the chief uses of the products. Being easily carried in the waistcoat-pocket, this Case is extremely well adapted for emergency use.

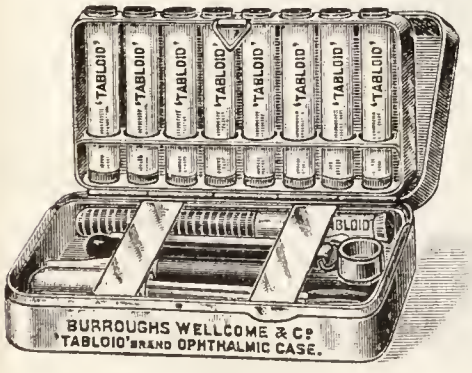
OPHTHALMIC POCKET-CASES 'TABLOID' BRAND [SEE LIST B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co.

'Tabloid' Ophthalmic Pocket-Cases are the most compact and complete equipments for ophthalmic work. In a space of two or three cubic inches they contain supplies of active and accurately-divided ophthalmic drugs, solution dropper, camel-hair brushes, etc.

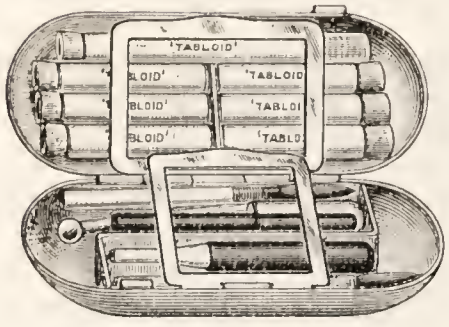
NO. 91. ASEPTIC OPHTHALMIC 'TABLOID BRAND POCKET-CASE



NO. 91. ASEPTIC OPHTHALMIC 'TABLOID' BRAND POCKET-CASE
Measurements: $2\frac{1}{4} \times 1\frac{1}{4} \times \frac{3}{4}$ in.

In nickel-plated metal. Fitted with nine tubes of 'Tabloid' and 'Soloid' Ophthalmic products, in nickel-plated rack, vulcanite rod, solution dropper, mortar, pestle, and two camel-hair brushes. This Case, after the removal of the contents, may be sterilised with ease. Complete with doeskin cover.

No. 92. Aseptic Ophthalmic 'Tabloid' Brand Pocket-Case *(The Mussel Shell)*



No. 92. Aseptic Ophthalmic 'Tabloid' Brand Pocket-Case *(The Mussel Shell)*

Measurements: $2\frac{1}{2} \times 1\frac{1}{8} \times \frac{5}{8}$ in.

In nickel-plated metal. Fitted with seven tubes of 'Tabloid' Ophthalmic products, mortar, pestle, vulcanite rod, solution dropper and two camel-hair brushes. Enclosed in a doeskin cover. The shape and size of this Case make it specially suitable for carrying in the waistcoat-pocket. After removal of the contents, the Case can readily be sterilised.

Medicine Pocket-Cases 'Tabloid' Brand [See List B. W. & Co.]

(Special Designs, the property of Burroughs Wellcome & Co.)

The word 'Tabloid' is a brand which designates fine products issued by Burroughs Wellcome & Co.

'Tabloid' Medicine Pocket-Cases are compact equipments of pure, active drugs, divided, ready for administration, into accurate doses. They enable physicians to have always with them an equipment of reliable medicines specially for emergency use. 'Tabloid' Pocket-Cases are recognised as an essential in the physician's equipment for country districts and when travelling.

For emergencies

When weighing and measuring are impossible, and when the carriage of liquids is impracticable, the convenience and the extreme portability of 'Tabloid' Medicine Pocket-Cases, which enable the physician to dispense emergency medicines at the time of his visit, will be fully appreciated.

No. 115. 'Tabloid' Brand Medicine Pocket-Case

No. 115. 'Tabloid' Brand Medicine Pocket-Case

Measurements: $8\frac{3}{4} \times 3\frac{3}{4} \times 1\frac{1}{2}$ in.

Contains ten $\frac{1}{2}$ oz. phials filled with 'Tabloid' Brand products, etc. In Seal, Pigskin, Cowhide, Morocco and other fine leathers.

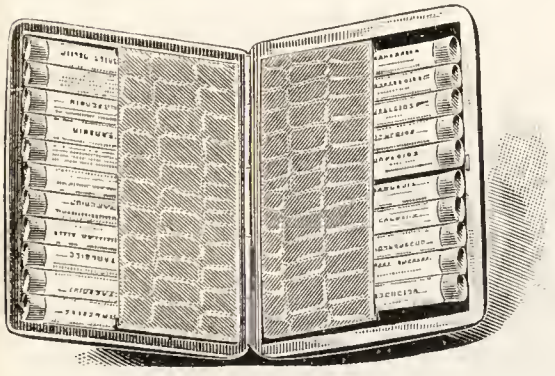
No. 117. 'Tabloid' Brand Medicine Pocket-Case

No. 117. 'Tabloid' Brand Medicine Pocket-Case

Measurements: $7\frac{1}{2} \times 4 \times 3$ in.

This Case is somewhat larger and more comprehensive than the No. 115 Case. It contains sixteen $\frac{1}{2}$ oz. phials of 'Tabloid' Brand products, etc. In Cowhide, Pigskin, Crocodile, Morocco and other fine leathers.

No. 124. 'Tabloid' Brand Medicine Pocket-Case



No. 124. 'Tabloid' Brand Medicine Pocket-Case

Measurements: $5\frac{1}{2} \times 4 \times 1\frac{1}{2}$ in.

Fitted with from sixteen to twenty-four tubes of 'Tabloid' Brand products, according to size of products. In Seal, Crocodile, Morocco and other fine leathers. This Case was specially designed for conveniently carrying in the breast pocket, on ordinary occasions, a stock of medicines sufficient to meet a variety of circumstances.

No. 125. 'Tabloid' Brand Medicine Pocket-Case

No. 125. 'Tabloid' Brand Medicine Pocket-Case

Measurements: $5\frac{1}{2} \times 4 \times 1\frac{1}{2}$ in.

Specially fitted for emergency purposes with fourteen tubes of 'Tabloid' Brand products, and a removable tray containing an equipment of twelve tubes of 'Tabloid' Hypodermic products, B. W. & Co. nickel-plated hypodermic syringe and two regular steel needles. In Cowhide and other fine leathers.

No. 133. 'Tabloid' Brand Medicine Pocket-Case

No. 133. 'Tabloid' Brand Medicine Pocket-Case

Measurements: $6\frac{3}{4} \times 4\frac{1}{2} \times 1\frac{1}{4}$ in.

An ideal pocket-case, which closes without straps or other external fastening. Metal body, covered with black Morocco or Cowhide. Contains eight ½-oz. phials of 'Tabloid' Brand products, etc., and wallet for papers.

No. 141. 'Tabloid' Brand Medicine Pocket-Case

No. 141. 'Tabloid' Brand Medicine Pocket-Case

Measurements: $7\frac{1}{2} \times 4 \times 2\frac{1}{2}$ in.

In Morocco leather. Fitted with fifteen ½ oz. phials of 'Tabloid' Brand products, and a compartment containing small boxes for the physician's use in distributing the contents of the Case. Design similar to No. 117 Case.

CYCLE- CARRIAGE- AND MOTOR-CAR CASES
MEDICAL EQUIPMENT CHESTS, ETC.
'TABLOID' BRAND

[SEE LIST B. W. & Co.]

(Special Designs, the property of Burroughs Wellcome & Co.)

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

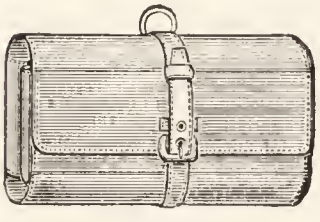
'Tabloid' Cycle- Carriage- and Motor-Car Cases and Medical Equipment Chests contain 'Tabloid,' 'Soloid' and other fine products of B. W. & Co., minor surgical instruments and sundry emergency dressings. A great variety is prepared to meet the requirements of professional men in home practice, according to the extent and the special character of their particular requirements.

For general practitioners

'Tabloid' Medical Equipment Chests and Cases provide complete portable dispensaries for practitioners in distant stations, missionaries, explorers and expeditions of all kinds. For such purposes they are the only really satisfactory form of medical equipment, and have been universally adopted. In addition to full supplies of accurately-dosed, permanent and reliable drugs, these equipments contain minor surgical instruments and dressings.

For physicians, explorers, missions, etc.

NO. 137. 'TABLOID' BRAND MEDICINE SADDLE-CASE



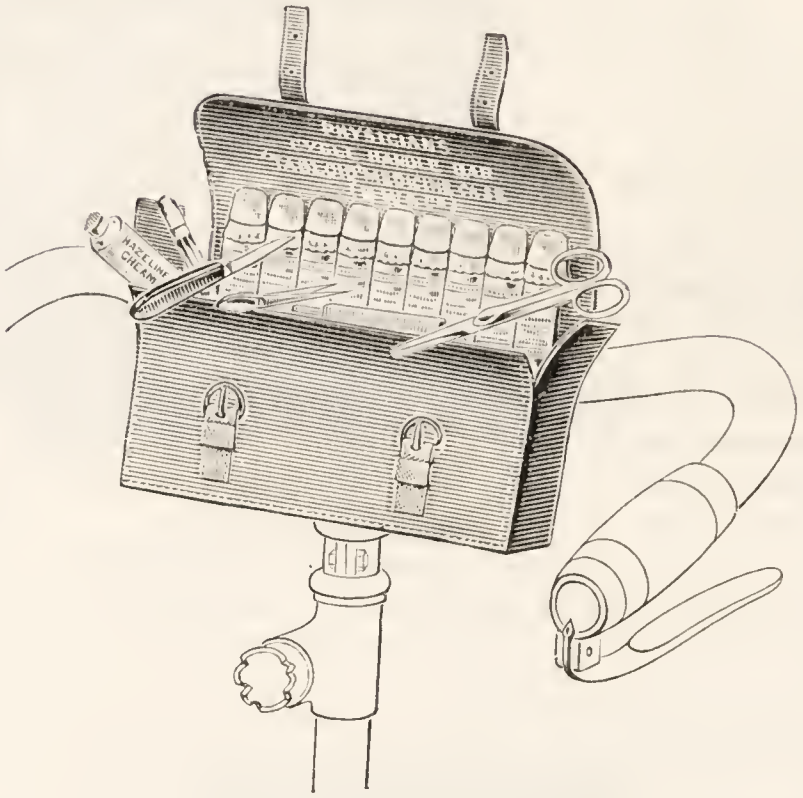
No. 137. 'TABLOID' BRAND MEDICINE SADDLE-CASE

In Cowhide or Pigskin. Measurements: $7\frac{1}{4} \times 4\frac{1}{4} \times 2\frac{3}{4}$ in. Fitted in the same way as No. 117 Case (*see page* 125), with sixteen $\frac{1}{2}$ oz. phials of 'Tabloid' Brand products, etc.

NO. 139. 'TABLOID' BRAND MEDICINE SADDLE-CASE

Similar to No. 137, but fitted with feather-weight tubes. Measurements: $7\frac{1}{4} \times 4\frac{1}{2} \times 2\frac{3}{4}$ in.

No. 200. Physician's Cycle Handle-Bar 'Tabloid' Brand Medicine Case



No. 200. Physician's Cycle Handle-Bar 'Tabloid' Brand Medicine Case

In black enamelled Cowhide. Measurements: $8\frac{1}{4} \times 2\frac{1}{2} \times 4\frac{1}{4}$ in. Fitted complete with nine $\frac{1}{2}$ oz. phials of 'Tabloid' Brand products, minor surgical instruments, and sundry emergency dressings. Weight, about $1\frac{1}{2}$ lb.

No. 202. Physician's Cycle Stay-Bar 'Tabloid' Brand Medicine Case

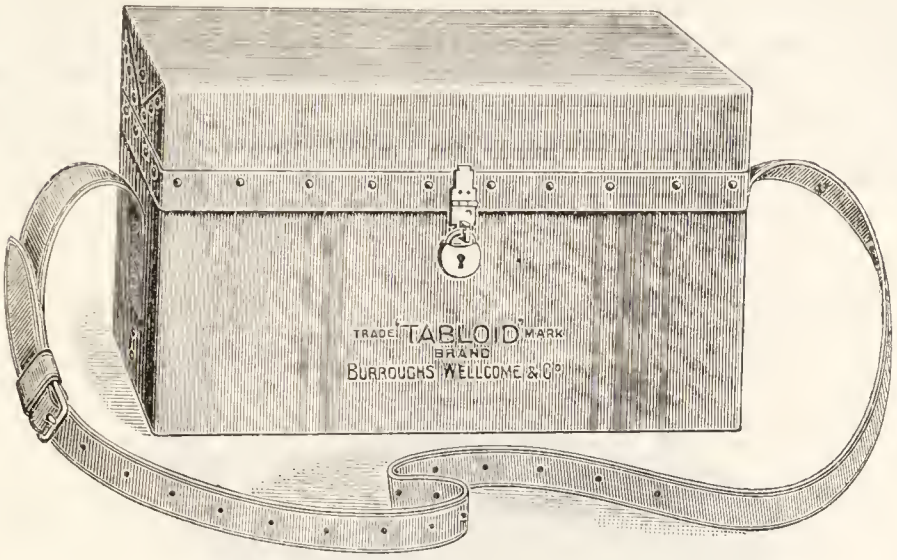
In black enamelled Cowhide. Measurements: 10 × $2\frac{3}{4}$ × 5 in. Fitted complete with twelve $\frac{1}{2}$ oz. phials of 'Tabloid' Brand products, minor surgical instruments and dressings. Similar in design to No. 200 Case.

No. 206. 'Tabloid' Brand Medicine Chest

(As carried by Mr. Thos. Stevens)

A reduced facsimile of No. 208 Chest (*see* page 129). Measurements: $14\frac{1}{2} \times 4\frac{1}{2} \times 7\frac{1}{4}$ in. Made of dressed and varnished Raw-hide. Fitted with twelve $2\frac{1}{2}$ oz. stoppered bottles of 'Tabloid' and 'Soloid' Brand products, instruments for minor surgery, dressings, etc.

No. 208. 'Tabloid' Brand Medicine Chest



No. 208. 'Tabloid' Brand Medicine Chest

Made of dressed and varnished Raw-hide; very light, portable and durable. Measurements: $15\frac{1}{2} \times 5\frac{1}{4} \times 9$ in. Fitted with twelve 4 oz. stoppered bottles of 'Tabloid' and 'Soloid' Brand products, instruments for minor surgery, dressings, etc.

No. 209. 'Tabloid' Brand Medicine Case

In Morocco leather, Cowhide or Pigskin. Measurements: 10 × 5 × $6\frac{1}{2}$ in. Contains nine 1 oz., twenty-four $\frac{1}{2}$ oz. and thirteen 2 dr. phials of 'Tabloid' and 'Soloid' Brand products; medicine measure, extra pockets, and loops for instruments; twelve tubes of 'Tabloid' Hypodermic products, B. W. & Co. nickel-plated hypodermic syringe, two regular steel needles, etc.

No. 219. 'Tabloid' Brand Medicine Case

In Morocco leather. Measurements: $13\frac{1}{2} \times 6 \times 6\frac{1}{4}$ in. Metal frame. Contains eight 2 oz. stoppered, ten 1 oz., twelve 6 dr., eight 4 dr. and ten 2 dr. corked phials. The rows of phials are arranged to fall so as to show the labels. Fitted with 'Tabloid' and 'Soloid' Brand products, twelve tubes of 'Tabloid' Hypodermic products, B. W. & Co. nickel-plated hypodermic syringe. with two regular steel needles, etc.

No. 220. 'Tabloid' Brand Medicine Case

In Morocco leather or Cowhide. Measurements: 14 × 5½ × 9½ in. Phials arranged in tiers to display labels. Contains eight 2 oz. stoppered, twelve 1 oz., fourteen 6 dr. and sixteen 4 dr. phials of 'Tabloid' and 'Soloid' Brand products, twelve tubes of 'Tabloid' Hypodermic products. B. W. & Co. nickel-plated hypodermic syringe, two regular steel needles, space and loops for instruments, etc. Similar in design to No. 221 Case.

No. 221. 'Tabloid' Brand Medicine Case

No. 221. 'Tabloid' Brand Medicine Case

In *extra finish* Cowhide, Morocco, Crocodile or Pigskin. Measurements: 14 × 5½ × 9½ in. Fitted in the same way as No. 220 Case, with the addition of nine 2 dr. phials of 'Tabloid' and 'Soloid' Brand products, and a glass-stoppered and capped ether bottle.

No. 227. 'Tabloid' Brand Medicine Case

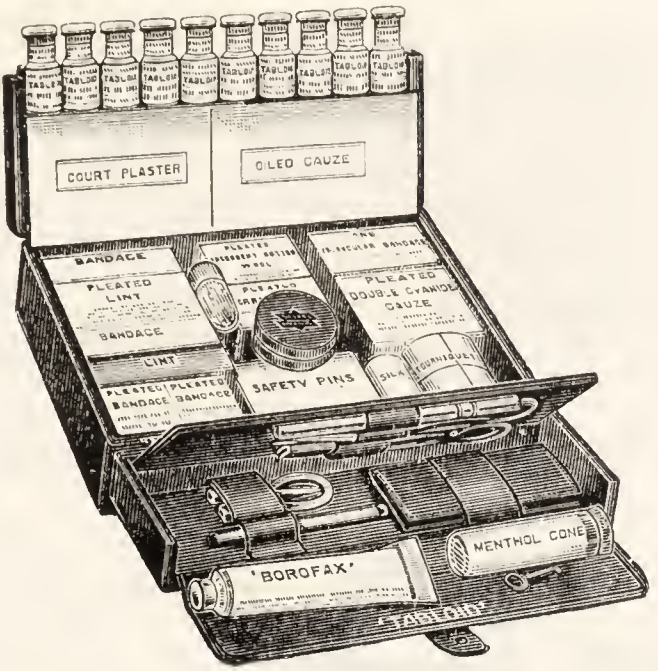
In Cowhide or Pigskin. Measurements: 6½ × 3¾ × 3 in. Made of two metal cups and frames covered with leather. Arranged to contain twenty 1½ dr., twelve 1 dr. and fourteen ½ dr. tubes of 'Tabloid' and 'Soloid' Brand products. Weight, about 2 lb. 6 oz.

No. 229. 'Tabloid' Brand Medicine Case

This case is conveniently shaped for packing in trunk, kit-bag or uniform case. Its rounded corners prevent injury to adjacent articles. Measurements: 8½ × 5¼ × 3¾ in. Made of two metal cups and frames covered with Cowhide. Arranged to hold forty 4 dr. phials of 'Tabloid' and 'Soloid' Brand products. Weight, about 4 lb. 13 oz.

No. 230. 'Tabloid' Brand Medicine Case

A Morocco leather or Cowhide case, which, when closed, measures 8 × 5½ × 2½ in. Fitted with ten phials of 'Tabloid' and 'Soloid' Brand products, instruments for minor surgery, and emergency dressings.



No. 230. 'Tabloid' Brand Medicine Case

Conveniently shaped for packing in trunk or bag. This case provides a remarkably compact outfit of emergency drugs, instruments and dressings, and will be found of particular utility when the practitioner is working at some distance.

No. 231. 'Tabloid' Brand Medicine Case

(As suggested by Sir W. Moore)

In black japanned metal. Measurements: 10¾ × 7½ × 3 in. Contains fifteen 1 oz. corked phials, and one 4 oz. corked bottle; instruments for minor surgery, and dressings. Complete with 'Tabloid' Brand products, etc., as recommended in Sir W. Moore's *Manual of Family Medicine for India*. Weight, about 6 lb. 14 oz.

No. 231. 'Tabloid' Brand Medicine Case

No. 250. 'Tabloid' Brand Medicine Chest

(As supplied to the late Sir H. M. Stanley, Emin Pasha, Military Expeditions, Missionaries, etc.)

This Medicine Chest and also No. 251 Chest, which is further referred to on the following page, have earned high encomiums from explorers. It was with reference to them that the late Sir H. M. Stanley said:—

"In my early expeditions into Africa, there was one secret wish which endured with me always, and that was to ameliorate the miseries of African explorers. How it was to be done, I knew not; who was to do it, I did not know. But I made the acquaintance of Messrs. Burroughs Wellcome & Co. As soon as I came in sight of their preparations and their works, I found the consummation of my secret wish. On my later expeditions I had all the medicines that were required for my black men, as well as my white men, beautifully prepared, and in most elegant fashion arranged in the smallest medicine chest it was ever my lot to carry into Africa."

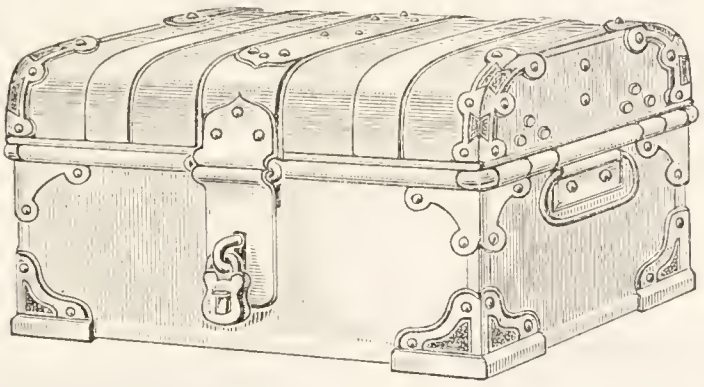
No. 250. 'Tabloid' Brand Medicine Chest

In japanned sheet-steel. Measurements: $15\frac{3}{4} \times 10\frac{1}{2} \times 8\frac{1}{4}$ in. Contains six 5 oz. and thirty $3\frac{1}{2}$ oz. glass-stoppered bottles of 'Tabloid,' 'Soloid' and other fine products of B. W. & Co., in movable teak-wood tray. The lid (in two sections) is arranged to hold supplies of 'Tabloid' Bandages and Dressings, instruments for minor surgery, and other accessories. Weight, about 40 lb.

This Chest, and No. 251 Chest, are the standard equipments for large expeditions and stations.

No. 251. 'Tabloid' Brand Medicine Chest

(As supplied to the Jackson-Harmsworth Polar Expedition, The National Antarctic Expedition, The British Antarctic Expedition, Sir Sven Hedin, etc.)



No. 251. 'Tabloid' Brand Medicine Chest

Measurements: $15\frac{3}{4} \times 10\frac{1}{2} \times 8\frac{1}{4}$ in. Weight, about 27 lb. Made of aluminium. Contains forty $3\frac{1}{2}$ oz. feather-weight bottles of 'Tabloid,' 'Soloid' and other fine products of B. W. & Co. In other respects it is fitted in the same way as No. 250 Chest. The ideal expeditionary chest when lightness and completeness of equipment are essential.

No. 254. 'Tabloid' Brand Medicine Chest *(The Indian)*

No. 254. 'Tabloid' Brand Medicine Chest
(The Indian)

In japanned metal. Measurements: $9\frac{1}{4} \times 7 \times 6\frac{1}{2}$ in. Contains sixteen $1\frac{3}{4}$ oz. glass-stoppered bottles, and six 4 dr. phials of 'Tabloid' and 'Soloid' Brand products, instruments and tray carrying sundry dressings, etc. Weight, about 12 lb. As carried by the late G. W. Steevens, the war correspondent.

No. 256. 'Tabloid' Brand Medicine Chest

(As supplied to the Duke of the Abruzzi's Polar Expedition)

In Aluminium. Measurements: $10\frac{1}{2} \times 6 \times 7\frac{1}{2}$ in. Fitted with eighteen $3\frac{1}{2}$ oz. feather-weight tubes of 'Tabloid' and 'Soloid' Brand products, and a tray containing minor dressings and sundries.

A similar chest is supplied in black japanned metal, and is known as No. 255 Chest. The contents are the same as No. 256 Chest, with the exception that the 'Tabloid' and 'Soloid' Brand products are in glass-stoppered bottles.

No. 258. 'Tabloid' Brand Medicine Case *(The Settler's)*

No. 258. 'Tabloid' Brand Medicine Case
(The Settler's)

In black japanned metal. Measurements: $8\frac{1}{4} \times 4\frac{1}{4} \times 5\frac{3}{4}$ in. Contains twelve $1\frac{1}{2}$ oz. bottles of 'Tabloid' and 'Soloid' Brand products, 'Hazeline' Cream, 'Tabloid' Bandages and Dressings, adhesive plaster and other accessories. A very compact and useful case, adapted for settlers' or planters' use, and for stations, farms or camps in outlying districts.

No. 603. 'Tabloid' Brand Medicine Case

Measurements: $6\frac{1}{2} \times 3\frac{1}{4} \times 2$ in. Fitted with five oval bottles of 'Tabloid' Brand products: Cascara Sagrada, gr. 2; Phenacetin Compound; Potassium Chlorate and Borax; Quinine Bisulphate, gr. 2, and Soda-Mint, also one bottle of 'Soloid' Boric Acid, gr. 6 (perfumed).

No. 700. 'Tabloid' Brand Emergency Belt

Measurements: $43 \times 4\frac{3}{4}$ in., with buckles and shoulder straps; seven waterproof pouches, fitted as follows: Aluminium case of surgical instruments; aluminium case containing Hypodermic Syringe and 'Tabloid' Hypodermic products; twenty-three feather-weight tubes of 'Tabloid' and 'Soloid' Brand products: combined mortar and medicine cup, emergency dressings, etc.

ANTIDOTE CASE, 'TABLOID' BRAND

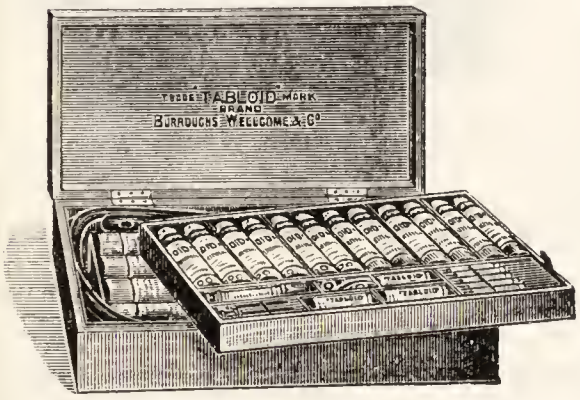
[SEE LIST B. W. & Co.]

Special Design, the property of Burroughs Wellcome & Co.

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

A compact equipment, containing apparatus and drugs ready for immediate use in the treatment of poisoning.

NO. 300. 'TABLOID' BRAND ANTIDOTE CASE



NO. 300. 'TABLOID' BRAND ANTIDOTE CASE

Measurements: 12 × 6 × 3 in. Fitted with stomach syphon-tube, catheter, B. W. & Co. nickel-plated hypodermic syringe, two needles, 'Tabloid' Hypodermic products, 'Vaporole' Amyl Nitrite, and toxicological chart; also eighteen ½ oz. phials and three tubes of 'Tabloid' Brand antidotes, etc., etc.

ANALYSIS CASES, 'SOLOID' BRAND

[SEE LIST B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

The word 'SOLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

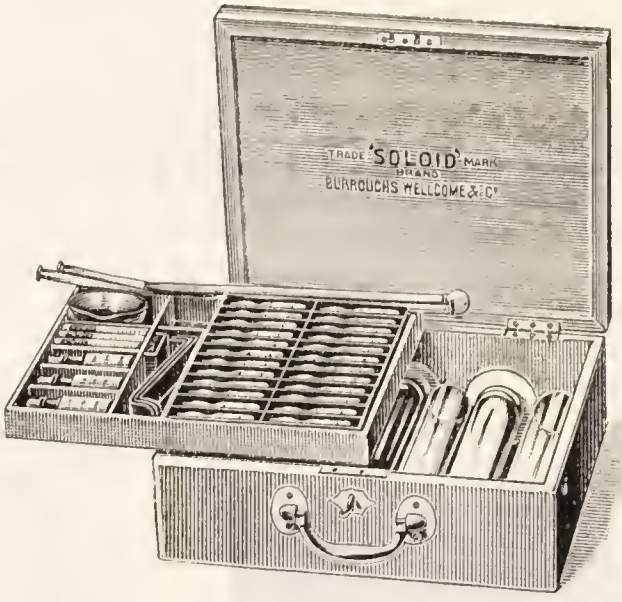
NO. 500. 'SOLOID' BRAND WATER ANALYSIS CASE

This convenient hand-case supplies the apparatus, reagents, etc., necessary for examining samples of drinking-water at the source of supply, and for drawing up the usual reports concerning the suitability of the water for domestic purposes. *(For illustration, see next page.)*

Analysis instantly at source

Measurements: $12\frac{1}{2} \times 10\frac{1}{2} \times 4\frac{3}{4}$ in. It contains a nickel evaporating basin, Erlenmeyer flask, tripod, spirit lamp, 100 c.c. and other graduated cylinders, capsules of 'Soloid' Brand Nessler's Solution, 'Soloid' Brand products of Metaphenylene-diamine Sulphate, Potassium Chromate, Potassium Ferrocyanide, Potassium Permanganate, Silver Nitrate, Soap, Sodium Bisulphate, Zinc Dust, etc.

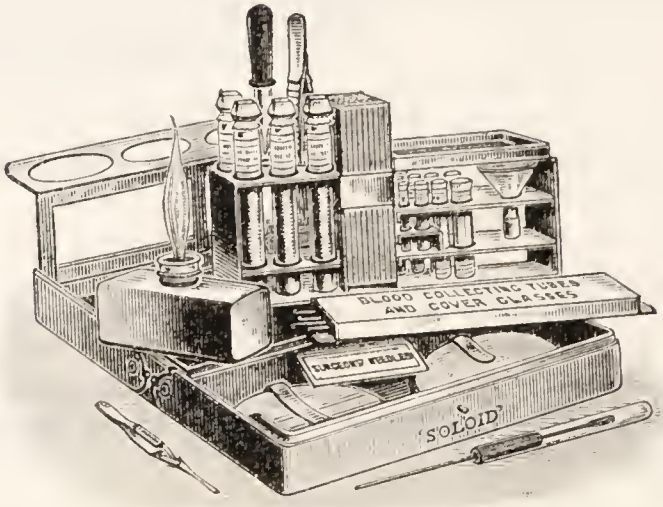
In case of breakage, *the whole or any single piece* of the apparatus may be obtained separately. The supply of 'Soloid' reagents may be renewed.



No. 500. 'Soloid' Brand Water Analysis Case

Fuller particulars of these and other examples sent on request

No. 505. 'Soloid' Brand Bacteriological Case



No. 505. 'Soloid' Brand Bacteriological Case
Measurements: $5 \times 3\frac{1}{2} \times 1\frac{5}{8}$ in.

This case enables medical men to carry out examinations which formerly were usually submitted to laboratory workers. Owing to its small size and light weight it can readily be carried in the pocket to the patient's bedside, to obtain a blood specimen or

a throat swab. The case is made of nickel-plated metal, easily rendered aseptic, and contains :

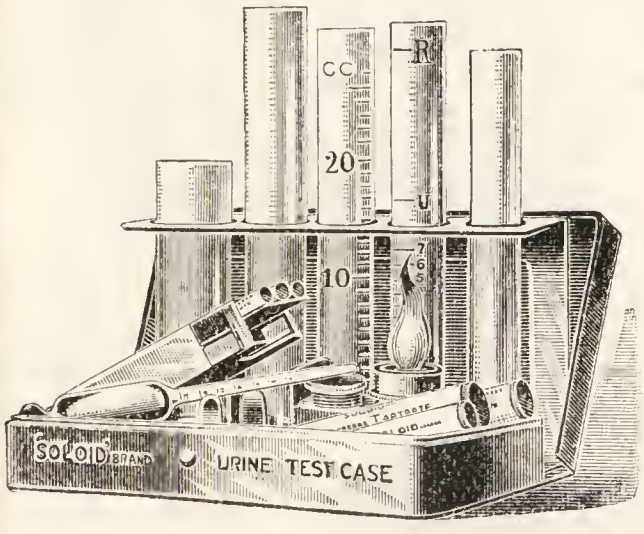
Three stoppered bottles, containing :—
  Methyl alcohol, dr. 1½
  Absolute alcohol, dr. 1½
  Distilled water, dr. 1½
A rod-stoppered bottle of Canada balsam
A graduated pipette
Cover-glass forceps
Dissection forceps
Twelve microscopic slides
A spirit lamp
A glass funnel
Two watch-glasses
A packet of filter papers
A metal case of needles (straight No. 9)
A supply of blood-collecting pipettes
Fifty cover-slips
A glass rod for powdering microscopic stains, etc.
A sterile swab
A tube each of the following 'Soloid' stains :—
  Eosin, Methyl Violet, Fuchsine, Romanowsky Stain, Eosin-Methylene Blue, Methylene Blue, Hæmatoxylin (Delafield), Toison Blood Fluid.

No. 510. 'SOLOID' BRAND URINE TEST CASE

Urine analysis instantly at the bedside

The clinical importance of urine analysis is fully recognised. This case provides, in a most compact and convenient form, the requirements for making an examination of urine at the bedside. Owing to their purity and accuracy, the 'Soloid' Brand products contained in this case make reliable test solutions without further weighing.

In nickel-plated metal, which is easily rendered aseptic. It contains a complete set of materials for making an examination of urine, both qualitative and quantitative, for albumin, sugar, etc. The outfit includes a urinometer, Esbach's albuminimeter, a graduated measure, pipette, test-tubes and stand, test-papers, spirit lamp, analysis charts, and a good supply of 'Soloid' reagents, including Fehling's Test, Indigo Test, Picric Acid, Potassium Ferrocyanide and Citric Acid. Each portion of the apparatus can also be obtained separately. Complete with doeskin cover.



No. 510. 'SOLOID' BRAND URINE TEST CASE

Measurements : 5¾ × 2¾ × 1¼ in.

'TABLOID' BRAND FIRST-AID

FOR AUTOMOBILISTS, AVIATORS, AERONAUTS, YACHTSMEN, SPORTSMEN, TRAVELLERS, TOURISTS, ETC.)

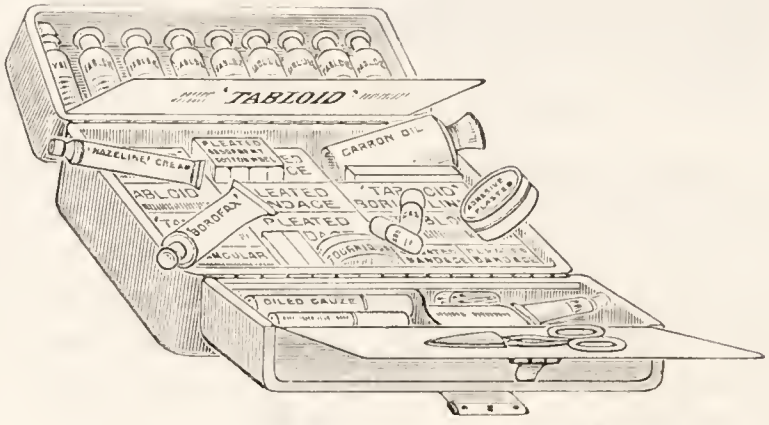
[SEE LIST B. W. & Co.]

Special Designs, the property of Burroughs Wellcome & Co.

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

These equipments provide compact, complete outfits of emergency medicines, dressings and first-aid accessories. Portable and convenient, they comprise an ideal outfit for motorists, cyclists, aeronauts, yachtsmen and explorers.

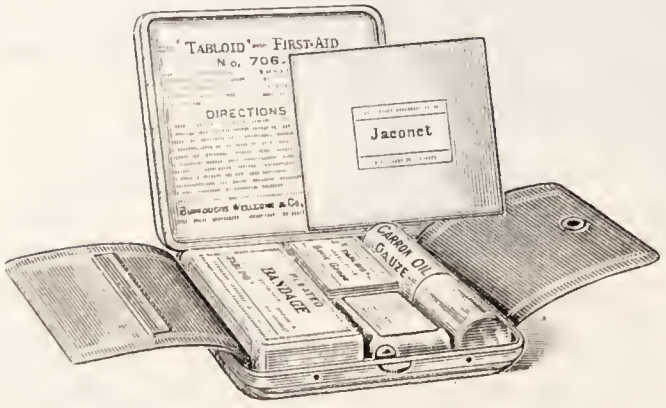
No. 702. 'TABLOID' BRAND FIRST-AID



No. 702. 'TABLOID' BRAND FIRST-AID

In rex red, royal blue or Brewster green enamelled leather. Measurements: 7 × 5¼ × 2¾ in. Contains eight tubes of 'Tabloid' and 'Soloid' Brand products, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' 'Hazeline' Cream, sal volatile, Carron oil gauze, 'Tabloid' Bandages and Dressings, tourniquet, jaconet, plaster, protective skin, scissors, pins, etc., etc.

No. 706. 'TABLOID' BRAND POCKET FIRST-AID



No. 706. 'TABLOID' BRAND POCKET FIRST-AID

Measurements: 3½ × 3 × ¾ in. Contains bandage, boric gauze, Carron oil gauze, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," adhesive plaster, court plaster, jaconet, pins, and 1 card of contents, etc. In aluminium, complete.

No. 707. 'Tabloid' Brand First-Aid

No. 707. 'Tabloid' Brand First-Aid

In rex red, royal blue or Brewster green enamelled metal, or in aluminised metal. Measurements: $6\frac{1}{2} \times 3\frac{1}{4} \times 2$ in. Contains seven tubes of 'Tabloid' and 'Soloid' Brand products, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' Carron oil gauze and jaconet, Castor oil, 'Tabloid' Bandages and Dressings, plaster, protective skin, scissors, pins, etc., etc.

No. 708. 'Tabloid' Brand First-Aid

No. 708. 'Tabloid' Brand First-Aid

In rex red, royal blue or Brewster green enamelled metal, or in aluminised metal. Measurements: $6\frac{1}{2} \times 3\frac{1}{4} \times 2$ in. Contains 'Tabloid' Bandages and Dressings, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' Carron Oil Gauze, jaconet, plaster, protective skin, camel-hair brush, pins, etc., and two tubes of 'Tabloid' and 'Soloid' Brand Products.

No. 709. 'Tabloid' Brand First-Aid

In rex red or royal blue enamelled metal. Measurements: $6\frac{1}{2} \times 3\frac{1}{4} \times 2$ in. Contains 'Tabloid' Bandages and Dressings, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," Borofax, Carron Oil Gauze, jaconet, plaster, protective skin, camel-hair brush, pins, etc.

No. 712. 'TABLOID' BRAND FIRST-AID

In rex red, royal blue or Brewster green enamelled metal, or in aluminised metal. Measurements: $6\frac{1}{2} \times 4\frac{1}{4} \times 2$ in. Contains seven tubes of 'Tabloid' and 'Soloid' Brand products, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' Carron oil gauze and jaconet, Castor oil, 'Tabloid' Bandages and Dressings, plaster, protective skin, scissors pins, etc., etc.

No. 712. 'TABLOID' BRAND FIRST-AID

No. 715. 'TABLOID' BRAND FIRST-AID

In rex red, royal blue or Brewster green enamelled metal, or in aluminised or black japanned metal.

Measurements: $7\frac{1}{2} \times 4\frac{1}{4} \times 2$ in. Contains eight tubes of 'Tabloid' and 'Soloid' Brand products, 'Vaporole' Aromatic Ammonia, for use as "Smelling Salts," 'Borofax,' sal volatile, Carron oil, 'Tabloid' Bandages and Dressings, jaconet, plaster, protective skin, scissors, pins, etc.

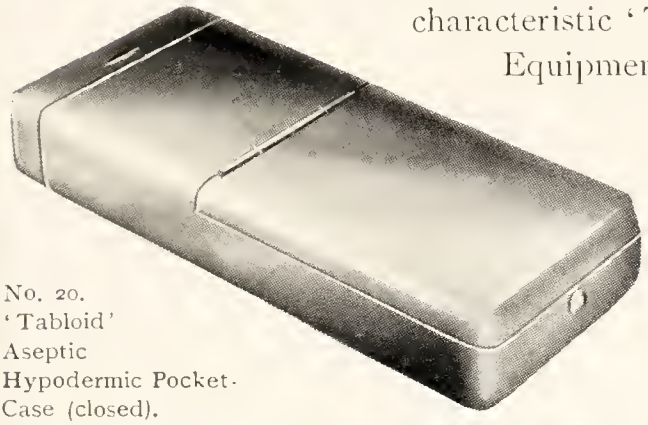
No. 715. 'TABLOID' BRAND FIRST-AID

(See also page 144)

Some Characteristic 'Tabloid' and 'Soloid' Cases

For Hypodermic, Dispensing, Analytical, First-Aid and Photographic use

On this and the three following pages are presented facsimile reproductions in natural colours of some characteristic 'Tabloid' and 'Soloid' Equipments selected from those described on *pages 119 to 140* of this book, to which reference should be made for full details of contents, etc.



No. 20.
'Tabloid'
Aseptic
Hypodermic Pocket-
Case (closed).

Measurements: $4\frac{1}{2} \times 1\frac{3}{4} \times \frac{3}{4}$ in.

See also B. W. & Co.'s Price List

No. 20 'Tabloid' brand
Aseptic Hypodermic
Pocket-Case

The ideal
Pocket
Hypodermic
Equipment
for the
Physician

No. 20. 'Tabloid' Aseptic Hypodermic
Pocket-Case (open).

No. 221 'Tabloid' brand Medicine Case

Ideal for the Physician's Motor or Carriage

Measurements:
14 × 5½ × 9½ in.

Also supplied in
Cowhide, Pigskin, or
Crocodile Leather

No. 221. 'Tabloid' Medicine Case (Morocco Leather)

For full details, see page 130

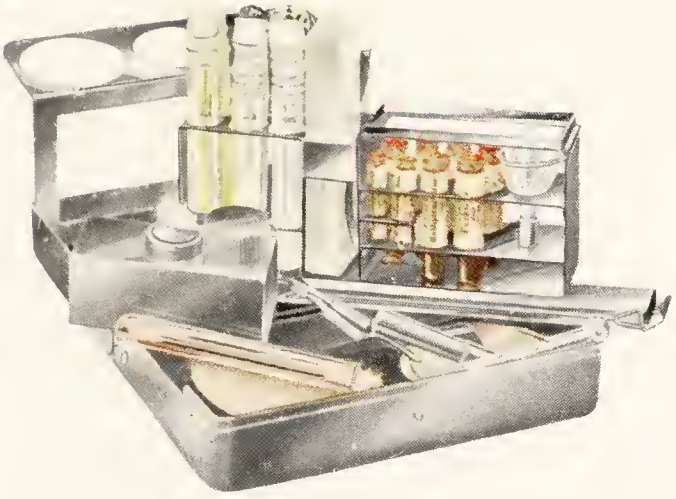
No. 133 'Tabloid' brand Medicine Pocket-Case

A unique case for the pocket, the outside being perfectly flush. Metal body, covered Cowhide or Black Morocco Leather.

No. 133. 'Tabloid' Medicine Pocket-Case (Cowhide)
Measurements: 6¾ × 4½ × 1¼ in.

For full details, see page 126

No. 505 'Soloid' brand Bacteriological Case



Easily rendered aseptic

Complete with Doeskin Cover

No. 505 'Soloid' Bacteriological Case (Nickel-plated Metal)
Measurements: $5 \times 3\frac{1}{2} \times 1\frac{5}{8}$ in.

For full details, see page 136

No. 510 'Soloid' brand Urine Test Case

No. 510 'Soloid' Urine Test Case (Nickel-plated Metal)

Measurements: $5\frac{3}{4} \times 2\frac{3}{4} \times 1\frac{1}{4}$ in.

Complete with Doeskin Cover

For full details, see page 137

No. 715 'TABLOID' FIRST-AID

A compact outfit of Bandages, First-Aid accessories, etc.

In Rex Red, Royal Blue or Brewster Green Enamelled Metal, or in Aluminised or Black Japanned Metal.

No. 715. 'Tabloid' First-Aid (Royal Blue Enamelled Metal)
Measurements: $7\frac{1}{2} \times 4\frac{1}{4} \times 2$ in.

For full details of 'Tabloid' First-Aid Equipments, see pages 138-140

No. 905 'TABLOID' BRAND PHOTOGRAPHIC OUTFIT

An ideal outfit of chemicals for developing, fixing, toning, intensifying and reducing negatives and prints.

In Rex Red, Royal Blue, Imperial Green or Bright Scarlet Enamelled Metal, or in Black Japanned Metal.

When ordering, please specify colours required.

No. 905. 'Tabloid' Photographic Outfit (Bright Scarlet Enamelled Metal)
Measurements: $4 \times 4 \times 2\frac{1}{8}$ in.

For full details, see page 171

THE SMALLEST MEDICINE CHEST IN THE WORLD

This tiny gold medicine chest is fitted with twelve square medicine chest bottles containing 300 doses of 'Tabloid' Brand Medicaments, equivalent to 15 pints of fluid medicine.

Dangerous Abbreviation

The words 'Tabloid' and 'Soloid' should always be written in full to ensure the supply of genuine B. W. & Co. products.

When ordering a certain product an abbreviation may bring you what you do not want, and serious disappointment.

To write any contraction of 'Tabloid' or 'Soloid,' when these brands are intended, introduces an element of doubt. Why take the risk?

Behind the brands 'Tabloid' and 'Soloid' are years of research, experience and endeavour—the whole foundation of Burroughs Wellcome & Co.'s reputation.

When 'Tabloid'— — — or 'Soloid' — — — is written, in whatever part of the world the prescription is dispensed, the patient will receive the same genuine products of uniform strength and unvarying activity compounded with exceptional accuracy from ingredients of the highest standard of purity.

It is best and safest, therefore, to write the full word, *e.g.*—

℞ 'Tabloid' — — —

FORMULARY
OF
FINE PRODUCTS
ISSUED BY
BURROUGHS WELLCOME & CO.

The Products of Burroughs Wellcome & Co. are guaranteed by them under the Food and Drugs Act, June 30, 1906.—Serial No. 3394.

'Alaxa' Aromatic Liqueur of Cascara Sagrada (*Trade Mark*) — DOSE

An aromatic liqueur which presents the tonic, laxative properties of cascara sagrada in a pleasant and acceptable condition. — One-half to two teaspoonfuls.

Alkaloids, 'Wellcome' Brand *(see pages 224-233)*

Ammonium Chloride Inhaler, 'Vaporole' Brand *(see page 222)*

Analysis Cases, 'Soloid' Brand *(see page 135)*

Analysis Charts, packets of 25.

Anæsthetics, Local *(see* 'Tabloid' Hypodermic Anæsthetic Compounds, *page 157)*

Antidote Case, 'Tabloid' Brand *(see page 135)*

'Aol,' a derivative of *Santalum album* *(see* 'Tabloid' (*Trade Mark*) Brand products, *page 185)*

Arylarsonates *(see* 'Orsudan' and 'Soamin,' *pages 206, 213)*

Bacteriological Case, 'Soloid' Brand *(see page 136)*

Bandages, Pleated Compressed, 'Tabloid' Brand *(see pages 149, 150)*

Pharmacopœial preparations are U.S.P. unless otherwise stated

'Bivo' Beef and Iron Wine
(*Trade Mark*)

Restorative and stimulant. Possesses exceptional properties which distinguish it from ordinary beef-wines.

'Borofax' BRAND BORIC ACID OINTMENT
(*Trade Mark*)

An emollient, possessing antiseptic and sedative properties.

'Brockedon' Products

Burroughs Wellcome & Co. are the successors to, and sole proprietors of, the business of BROCKEDON, who, in 1842, ORIGINATED COMPRESSED MEDICINES in the shape of bi-convex discs—issued under the designation of COMPRESSED PILLS.

'Brockedon' Brand Bicarbonate of Soda, in boxes of three sizes
,, ,, ,, ,, Potash ,, ,,
,, ,, Chlorate ,, ,, ,, ,,

Chemicals, 'Wellcome' Brand *(see pages 223-233)*

CHESTS AND CASES (B. W. & Co.)

A comprehensive selection of chests and cases is prepared and issued under the 'TABLOID' and 'SOLOID' Brands, fitted with medicines for every variety of climate, and varying in size and contents, from the fully-equipped chests containing supplies sufficient for medical officers to expeditions, etc., down to the compact pocket-cases suited to the needs of the private practitioner.

Analysis Cases, 'Soloid' Brand *(see page 135)*

Antidote Case, 'Tabloid' Brand *(see page 135)*

Antiseptic Cases, 'Soloid' Brand

Fitted with from four to eighteen containers of 'Soloid' Brand antiseptics.

Bacteriological Case, 'Soloid' Brand *(see page 136)*

First-Aid, 'Tabloid' Brand *(see pages 138-140)*

Hypodermic Pocket-Cases, 'Tabloid' Brand *(see pages 119-122)*

Medicine Chests and Cases, 'Tabloid' Brand *(see pages 124-134)*

Urine Test Case, 'Soloid' Brand *(see page 137)*

Compound Menthol Snuff (B. W. & Co.) *(see page 163)*

Dental Hypodermic Syringe, The B. W. & Co. *(see page 156)*

DRESSINGS, PLEATED COMPRESSED

TRADE MARK **'TABLOID'** BRAND

Pleated Compressed Dressings were originated and introduced by Burroughs Wellcome & Co.

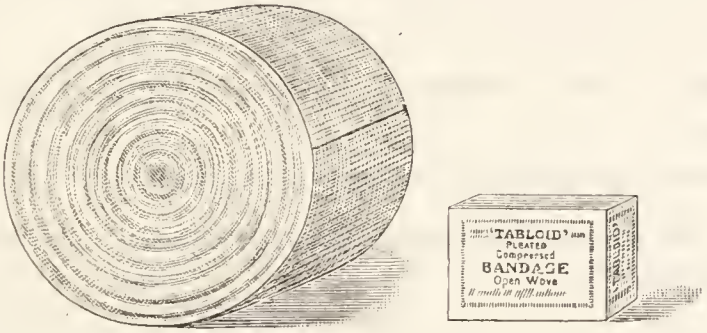
The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

The introduction of 'Tabloid' Pleated Compressed Bandages and Dressings marks an important advance in the preparation of surgical accessories. These bandages and dressings are made of materials of the best quality, and are subjected to great pressure under which each assumes a rectangular shape. After compression, each is enclosed automatically in an impervious covering of parchment paper.

Important advance

The superiority of 'Tabloid' Dressings over the ordinary variety is very marked, not only in convenience and compactness, but also in quality of materials. Their more important advantages may be thus summarised:—

1. Only materials of exceptional quality are used in their manufacture, and their general excellence commends them to critical users.



Graphic representation (one-half actual size), showing the relative bulk of an ordinary and a 'Tabloid' Bandage. Each 6 yards × 2½ in.

Dressings, Pleated Compressed, 'Tabloid' Brand—*continued*

2. They occupy the smallest possible space and yet can be unfolded as easily as those previously in use.

3. They are kept free from all risk of contamination.

4. The antiseptic dressings are evenly charged with medicament.

5. By reason of their extreme compactness they are by far the best for the hand-bag, cycle- or saddle-case.

The illustration on previous page graphically demonstrates the saving in space which is effected when Pleated Bandages and Dressings are carried. The relative sizes of an ordinary and a Pleated Bandage are striking. The flat sides of Pleated Bandages enable them to be packed in a fraction of the space required by those previously in use.

These dressings are also issued *sterilised* in special impervious coverings. The requirements of modern surgical treatment, so imperfectly fulfilled by many of the ordinary cheap dressings, are ideally met by these sterilised pleated products.

The following are issued :—

Absorbent Wool between Gauze, Pleated Compressed, 'Tabloid' Brand—

In 2 ounce packets, in packages of 1 dozen.

Bandages, Pleated Compressed, 'Tabloid' Brand—

Open Wove, 1 in. × 6 yards, in packages of 1 dozen
,, ,, 2½ in. × 6 yards ,, ,, ,, ,,
Flannel, 2½ in. × 5 yards ,, ,, ,, ,,
Triangular (Esmarch's Pictorial),, ,, ,, 2 bandages

These triangular bandages are of great service in first-aid or other emergency work.

Carbolised Tow, Pleated Compressed, 'Tabloid' Brand—

In 2 ounce packets, in packages of 1 dozen.

Cotton Wool, Pleated Compressed, 'Tabloid' Brand—

Absorbent, ¼ ounce, in packets of 4, in packages of 1 dozen *(not supplied sterilised)*
,, 1 and 2 ounce packets

Dressings, Pleated Compressed, 'Tabloid' Brand—*continued*

Cotton Wool, Pleated Compressed, 'Tabloid' Brand—*continued*

Boric,	1 and 2 ounce packets
Double Cyanide, 3%,	1 and 2 ,, ,,
Iodoform,	1 and 2 ,, ,,

Gauze, Pleated Compressed, 'Tabloid' Brand—

Absorbent,	in packets of 3 yards
Boric,	,, ,, 3 ,,
Double Cyanide, 3%,	,, ,, 3 ,,
Iodoform,	,, ,, 1 yard
,,	,, ,, 3 yards
,,	,, ,, 6 yds. × 1 in.
Sal Alembroth, 1%,	,, ,, 3 yards

Lint, Pleated Compressed, 'Tabloid' Brand—

Plain,	1 and 2 ounce packets
Boric,	1 and 2 ,, ,,
Carbolised,	1 ,, ,,

Effervescent Medicinal Substances, 'Tabloid' Brand—

In the preparation of 'Tabloid' Effervescent products only ingredients of exceptional purity are employed, and special methods are adopted to retain their effervescent properties. On account of their relatively small surface the 'Tabloid' products are much less liable to deterioration than the ordinary granular preparations. Mixed with water they promptly render draughts of a refreshingly effervescent nature and accurate posology. (*See* 'Tabloid' Brand Effervescent Products, *page* 194.)

TRADE MARK 'ELIXOID' BRAND PRODUCTS

The word 'ELIXOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'Elixoid' Brand Products are elegant and acceptable fluid preparations of important medicaments to which agreeable

'Elixoid' Brand Products—*continued*

flavours have been imparted without in any degree diminishing their physiological activity.

'ELIXOID' BRAND—

„ **Ammonium Valerate**, in bottles of 8 Imperial fl. oz.—
Each fluid drachm contains Ammonium Valerate, gr. 2.

„ **Formates Compound**, in bottles of 4 Imperial fl. oz.—
Each fluid ounce contains Calcium Formate, gr. 12; Sodium Formate, gr. 6; Magnesium Formate, gr. 6.

„ **Glycerophosphates**, in bottles of 4 Imperial fl. oz.—
Each fluid ounce contains Calcium Glycerophosphate, gr. 4; Sodium Glycerophosphate, gr. 2; Potassium Glycerophosphate, gr. 2; and Magnesium Glycerophosphate, gr. 1.

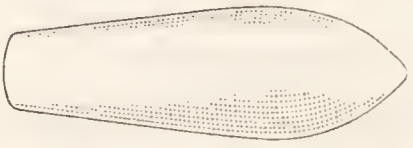
„ **Mucin**, in bottles of 4 Imperial fl. oz.—
Each fluid drachm contains Mucin, in suspension, gr. 2½.

„ **Pine Tar Compound**, in bottles of 4 Imperial fl. oz.—
A pleasantly-flavoured preparation containing Tar, 'Pinol,' Terpin Hydrate, Wild Black Cherry, Tolu and Ipecac in a convenient and acceptable form.

Also various other products issued under the 'Elixoid' Brand

TRADE MARK 'ENULE' BRAND RECTAL SUPPOSITORIES

The word 'ENULE' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

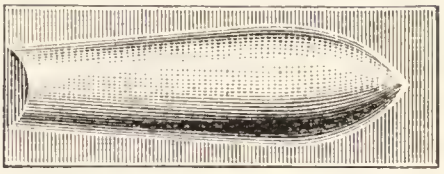


'Enule' Brand Rectal Suppository after removal of sheath. This shape originated by Burroughs Wellcome & Co.

The 'Enule' rectal suppository possesses conspicuous advantages over those of the ordinary conical shape, which are difficult to introduce, and may even be expelled. 'Enule' suppositories are encased in sheaths of pure tinfoil, easily stripped off

'Enule' Brand Rectal Suppositories *—continued*

at the moment of using. They contain accurate doses of pure drugs, the active principles of which are evenly diffused throughout the mass, and they retain the full activity of the medicament for long periods of time.



'Enule' Brand Rectal Suppository showing sheath of pure tinfoil. This shape originated by Burroughs Wellcome & Co.

PROF. CASPARI, in his *Treatise on Pharmacy*, says:—

"The usual shape of rectal suppositories is that of a cone with a rounded apex, but the difficulty of readily introducing them into the rectum has led to the designing of a new shape by H. S. Wellcome, of London, the great advantages of which become apparent when it is remembered that the bulbous end is inserted into the rectum, and, that as soon as the greatest diameter has been passed, expulsion of the suppository is impossible, by reason of the very contractile force of the sphincter muscle, which renders retention of the ordinary conical shape often so difficult."

Expert opinion

Each kind is packed in boxes of one dozen (of one strength)

'ENULE' BRAND—			DIRECTION
No.			
,, 26.	Belladonna Extract	gr. 1/4 ...	As required
,, 27.	,, ,,	gr. 1/2 ...	As required
,, 9.	Bismuth Subgallate	gr. 10 ...	As required
,, 14.	Cocaine Hydrochloride	gr. 1/2 ...	As required
,, 25.	Gall and Opium ...	... ...	As required
	℞ Acidi Tannici	... gr. 3	
	Ext. Opii	... gr. 1/4	
,, 1.	Glycerin (Anhydrous), 95%	Children's size	As required
,, 2.	Glycerin (Anhydrous), 95%	Adults' size	As required
,, 5.	'Hazeline' Compound Containing 'Hazeline,' Extract of Hamamelis and Zinc Oxide. (*See also* 'Hazeline' Suppositories)		As required
,, 28.	Lead and Opium ...	... ...	As required
	℞ Plumbi Acetatis	... gr. 3	
	Pulv. Opii	... gr. 1	
,, 3.	Meat, Predigested	Children's size	As required
,, 4.	,, ,,	Adults' size	

Containing gr. 8½ and gr. 15, respectively, of concentrated peptone from choice fresh beef.

'Enule' Brand Rectal Suppositories—*continued*

'ENULE' BRAND—*continued*		DIRECTION
No.		
,, 6. Milk, Prediges	Children's size	As required
,, 7. ,, ,,	Adults' size	
Containing gr. 10 and gr. 18, respectively, of concentrated peptone from new milk.		
,, 29. Morphine and Belladonna		As required
℞ Morphinæ Hydrochloridi ... gr. 1/4		
Ext. Belladonnæ ... ... gr. 1/2		
,, 16. Morphine Hydrochloride	gr. 1/4 ...	As required
,, 17. ,, ,,	gr. 1/2 ...	As required
,, 18. ,, ,,	gr. 1 ...	As required
,, 20. Opium Extract ...	gr. 1 ...	As required
,, 13. Quassin, Amorphous	gr. 1/2 ...	One on each of at least twelve successive nights
The bitter principle of quassia wood, used in the treatment of thread-worms, especially in children.		
,, 8. Quinine Bisulphate ...	gr. 5 ...	As required
,, 21. Santonin	gr. 3 ...	As required
,, 23. Soap Compound	...	As required
℞ Saponis Animalis ... ... gr. 7		
Sodii Sulphatis Exsiccati ... gr. 7		

Also other preparations issued under the 'Enule' Brand

'Enule' Brand Rectal Suppositories must be stored in a cool and dry place.

TRADE MARK 'ERNUTIN' BRAND PRODUCTS

'Ernutin' products are the result of extensive researches in the Wellcome Physiological Research Laboratories (Eng.) They present the alkaloid Ergotoxine and the organic base Para-hydroxyphenylethylamine, the active therapeutic principles of Ergot, in a state of purity which up to the present has never been approached. Uniformity is secured by physiological standardisation.

'Ernutin' (Oral) In 1 oz., 4 oz. and 16 oz. amber-coloured stoppered bottles. DOSE 30 to 60 minims

'Ernutin' (for Hypodermic use) (*see* 'Vaporole' 'Ernutin,' *page* 221)

For full particulars of the pharmacology and therapeutics of 'Ernutin' products, see special booklet

Ether, in hermetically-sealed glass capsules, each containing min. 60 (3·6 c.c.)

'Eucalyptia,' pure oil of *Eucalyptus globulus*—
(Trade Mark) Respiratory disinfectant and deodorant.
Bottles containing 2 Imperial fl. oz.

First-Aid, 'Tabloid' Brand *(see pages 138-140)*

Gauze, Pleated Compressed, 'Tabloid' Brand *(see page 151)*

Glycerin 'Enule' Suppositories *(see page 153)*

TRADE MARK 'HAZELINE' BRAND PREPARATIONS

		DOSE
'Hazeline' Brand *Hamamelis virginiana*, in 4 and 16 Imperial fl. oz. bottles.	An anodyne and styptic fluid obtained by distillation from the fresh young twigs.	dr. 1 to dr. 3
'Hazeline' Cream, in collapsible tubes and glass pots.	Combines anodyne astringent and emollient properties.	—
'Hazeline' Soap, in boxes of 3 tablets.	Contains pure 'Hazeline.'	—
"'Hazeline' Snow," *(Trade Mark)* in glass pots.	A non-greasy preparation, owing its astringent, soothing and healing properties to the presence of a high proportion of 'Hazeline.'	—
'Hazeline' Suppositories, in boxes of 12.	Contain pure 'Hazeline'	One as required

(*See also* 'Enule' 'Hazeline' Compound, *page* 153)

Also other preparations issued under the 'Hazeline' Brand

HYPODERMIC APPARATUS

Syringes

All-Glass Aseptic Hypodermic Syringe, The B. W. & Co.

Barrel, piston and nozzle consist entirely of glass. The solid piston obviates any necessity for packing. May be instantly taken apart to be rendered aseptic. Five sizes, min. 15, min. 20, min. 40, min. 60, and 1 c.c., with two steel needles. A detachable finger-grip (nickel-plated) entirely distinct from the working parts of the syringe, can be supplied. A 'Tabloid' Detachable Sheath-Grip is also issued for use with this syringe.

(If desired, platino-iridium needles can be fitted)

Hypodermic Apparatus—*continued*

SYRINGES—*continued*

All-Glass Aseptic Hypodermic Syringe (H Pattern), The B. W. & Co.

Constructed specially for intramuscular injection. Min. 20 and min. 40, each supplied with two intramuscular steel needles.

Dental Hypodermic Syringe, The B. W. & Co.

Made of solid metal throughout ; therefore durable and easily rendered aseptic. Min. 30, with adjustable finger-grip, three needle attachments, and three steel needles ; complete in nickel-plated metal case.

Hypodermic Syringe, The B. W. & Co.

Solid Silver. Nozzle detachable, so that the solution of a 'Tabloid' Hypodermic product may be effected in the barrel. With two platino-iridium needles, in case. Capacity, min. 20.

Hypodermic Syringe, The B. W. & Co.

Nickel-plated. With two regular steel needles and finger-grip. Capacity, min. 15 or min. 20.

(If desired, platino-iridium needles can be fitted)

Mercury Succinimide Outfit, The B. W. & Co.

Remarkable results have been recently reported as following the use of 'Tabloid' Hypodermic Mercuric Succinimide in the treatment of tuberculosis.

These reports cover : Improvement in general condition, reduction of temperature, gain in weight, cure of advanced laryngeal and pharyngeal ulceration, improvement in advanced pulmonary lesion, and decided improvement in tubercular glands.

(For full particulars of the B. W. & Co. outfit for this treatment, *see* special circulars.)

Serum Syringe, The B. W. & Co. All-Glass Aseptic

The working parts are composed entirely of glass, the needle being attached to the nozzle by a flexible rubber joint which guards against fracture. In five sizes, 2 c.c., 3 c.c., 5 c.c., 10 c.c. and 25 c.c., with two steel needles, in metal case.

(If desired, platino-iridium needles can be fitted)

Serum Syringe, The B. W. & Co. Nickel-plated

In nickel-plated metal case, complete, with two special platino-iridium needles, capacity 5 c.c. or 10 c.c.

Needles for B. W. & Co. Syringes

(Full list, etc., sent on request)

HYPODERMIC PRODUCTS

TRADE MARK 'TABLOID' BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

"They are quite free from objectionable and irritative salts."—*British Medical Journal.*

"They are very soluble and not at all irritating."—*Lancet.*

'Tabloid' Hypodermic products accurately contain the stated weight of pure medicament. They are rapidly soluble, of uniform activity, and they keep perfectly.

PREPARATION	STRENGTH	DOSE
'TABLOID' BRAND (Hypodermic)—		
No.		
,, 36. Aconitine Nitrate	... gr. 1/640	gr. 1/640
,, 71. *Anæsthetic Compound, A		As required
℞ Cocainæ Hydrochloridi...	gr. 1/10	
Morphinæ Hydrochloridi	gr. 1/50	
Sodii Chloridi	gr. 9/10	
,, 70. *Anæsthetic Compound, B		As required
℞ Cocainæ Hydrochloridi...	gr. 1/5	
Morphinæ Hydrochloridi	gr. 1/50	
Sodii Chloridi	gr. 9/10	
,, 80. *Anæsthetic Compound, C		As required
℞ Eucainæ Lactatis ...	gr. 7/16	
Sodii Chloridi	gr. 3-15/16	
,, 87. Apomorphine Hydrochloride	gr. 1/20	gr. 1/20 to gr. 1/10
,, 51. ,, ,,	gr. 1/15	
,, 19. ,, ,,	gr. 1/10	
,, 93. * Apomorphine Hydrochloride + Strychnine Hydrochloride	gr. 1/10 + gr. 1/60	One
,, 15. Atropine Sulphate	... gr. 1/150	gr. 1/200 to gr. 1/100 (increased)
,, 14. ,, ,,	... gr. 1/100	
,, 13. ,, ,,	... gr. 1/60	
,, 121. Atropine Sulphate + Strychnine Sulphate	... gr. 1/200 + ... gr. 1/100	One
,, 122. Atropine Sulphate + Strychnine Sulphate	... gr. 1/150 + ... gr. 1/80	One
,, 43. *Caffeine Sodio-salicylate	gr. 1/2	gr. 1/2 to gr. 4

* *In tubes of* 12 *(all others contain* 20*)*

Pharmacopœial preparations are U.S.P. unless otherwise stated

Hypodermic Products, 'Tabloid' Brand—*continued*

PREPARATION	STRENGTH	DOSE
'TABLOID' BRAND (Hypodermic)—		
No.		
,, 23. Cocaine Hydrochloride ...	gr. 1/10	gr. 1/10 to gr. 1/2
,, 22. ,, ,, ...	gr. 1/6	
,, 54. * ,, ,, ...	gr. 1/4	
,, 40. * ,, ,, ...	gr. 1/2	
Cocaine Compounds *(see* Anæsthetic Compounds A and B, *page* 157*)*		
,, 44. Codeine Phosphate ...	gr. 1/4	gr. 1/4 to gr. 2
,, 77. *Cotarnine Hydrochloride	gr. 1/4	gr. 1/4 to gr. 1/2
,, 46. Curara	gr. 1/12	gr. 1/12 to gr. 1/2
,, 30. Digitalin (Amorphous) ...	gr. 1/100	gr. 1/500 to gr. 1/30
,, 86. Digitalin (Amorphous)	gr. 1/100	One
Strychnine Sulphate	gr. 1/100	
,, 38. Ergotinine Citrate ...	gr. 1/200	gr. 1/200 to gr. 1/50
,, 37. ,, ,, ...	gr. 1/100	
,, 92. * Ergotinine Citrate ...	gr. 1/100	One
Morphine Sulphate ...	gr. 1/6	
,, 81. * Ergotinine Citrate ...	gr. 1/100	One
Strychnine Sulphate ...	gr. 1/20	
,, 116. *Ergotoxine	gr. 1/100	gr. 1/100 to gr. 1/50
,, 119. * Ergotoxine	gr. 1/100	One
Morphine Sulphate ...	gr. 1/6	
,, 120. * Ergotoxine	gr. 1/100	One
Strychnine Sulphate ...	gr. 1/20	
Eserine *(see Physostigmine)*		
,, 79. *Eucaine Hydrochloride	gr. 1/3	gr. 1/3 to gr. 2
,, 78. * ,, ,,	gr. 1	
,, 112. *Eucaine Lactate... ...	gr. 1/3	gr. 1/3 to gr. 2
,, 113. * ,, ,, ...	gr. 1	
,, 102. Heroin Hydrochloride ...	gr. 1/25	gr. 1/25 to gr. 1/12
,, 101. ,, ,, ...	gr. 1/12	
,, 47. Homatropine Hydrochloride	gr. 1/250	gr. 1/250 to gr. 1/20
Hydrargyri Chloridi Corrosivi *(see Mercuric Chloride)*		

* *In tubes of* 12 *(all others contain* 20*)*

Pharmacopœial preparations are U.S.P. unless otherwise stated

Hypodermic Products, 'Tabloid' Brand—*continued*

PREPARATION	STRENGTH	DOSE
'TABLOID' BRAND (Hypodermic)—		
No. Hydrargyri Succinimidi *(see Mercuric Succinimide)*		
,, 49. Hyoscine Hydrobromide	gr. 1/200	gr. 1/200 to gr. 1/100 (increased)
,, 100. ,, ,,	gr. 1/100	
,, 48. * ,, ,,	gr. 1/75	
,, 95. *Hyoscine Compound, A	...	One
℞ Hyoscinæ Hydrobromidi ...	gr. 1/100	
Morphinæ Sulphatis	gr. 1/6	
Atropinæ Sulphatis	gr. 1/180	
,, 96. *Hyoscine Compound, B	...	One
℞ Hyoscinæ Hydrobromidi ...	gr. 1/100	
Morphinæ Sulphatis	gr. 1/4	
Atropinæ Sulphatis	gr. 1/150	
,, 31. *Hyoscyamine Sulphate	gr. 1/80	gr. 1/200 to gr. 1/100 (increased)
,, 41. * ,, ,,	gr. 1/20	
,, 29. Mercuric Chloride ...	gr. 1/60	gr. 1/60 to gr. 1/30
,, 28. ,, ,, ...	gr. 1/30	
,, 124. Mercuric Succinimide ...	gr. 1/10	gr. 1/10 to gr. 1/5
,, 98. ,, ,, ...	gr. 1/5	
,, 66. Morphine Hydrochloride	gr. 1/6	gr. 1/8 to gr. 1/4 (increased)
,, 55. ,, ,,	gr. 1/4	
,, 90. ,, ,,	gr. 1/3	
,, 91. * ,, ,,	gr. 1/2	
,, 74. * Morphine Hydrochloride	gr. 1/6	One
Atropine Sulphate ...	gr. 1/70	
,, 27. Morphine Meconate ...	gr. 1/8	gr. 1/8 to gr. 1/4 (increased)
,, 26. ,, ,, ...	gr. 1/6	
,, 25. ,, ,, ...	gr. 1/4	
,, 24. ,, ,, ...	gr. 1/3	
,, 6. Morphine Sulphate ...	gr. 1/12	gr. 1/8 to gr. 1/4 (increased)
,, 5. ,, ,, ...	gr. 1/8	
,, 4. ,, ,, ...	gr. 1/6	
,, 3. ,, ,, ...	gr. 1/4	
,, 2. ,, ,, ...	gr. 1/3	
,, 1. * ,, ,, ...	gr. 1/2	
,, 76. * ,, ,, ...	gr. 1	
,, 12. Morphine Sulphate ...	gr. 1/12	One of required strength
Atropine Sulphate ...	gr. 1/250	
,, 11. Morphine Sulphate ...	gr. 1/8	
Atropine Sulphate ...	gr. 1/200	

* *In tubes of* 12 *(all others contain* 20*)*

Pharmacopœial preparations are U.S.P. unless otherwise stated

Hypodermic Products, 'Tabloid' Brand—*continued*

PREPARATION		STRENGTH	DOSE
'TABLOID' BRAND (Hypodermic)—			
,,	No. 10.	Morphine Sulphate ... gr. 1/6; Atropine Sulphate ... gr. 1/180	One of required strength
,,	9.	Morphine Sulphate ... gr. 1/4; Atropine Sulphate ... gr. 1/150	
,,	8.	Morphine Sulphate ... gr. 1/3; Atropine Sulphate ... gr. 1/120	
,,	85.	Morphine Sulphate ... gr. 1/3; Atropine Sulphate ... gr. 1/60	
,,	7.	* Morphine Sulphate ... gr. 1/2; Atropine Sulphate ... gr. 1/100	
,,	89.	Morphine Sulphate ... gr. 1/4; Strychnine Sulphate ... gr. 1/60	One
,,	88.	Morphine Tartrate ... gr. 1/4	gr. 1/8 to gr. 1/4 (increased)
		Nitroglycerin *(see Trinitrin)*	
,,	39.	Physostigmine (Eserine) Salicylate ... ... gr. 1/100	gr. 1/100 to gr. 1/25
,,	84.	Picrotoxin ... ... gr. 1/60	gr. 1/100 to gr. 1/25
,,	34.	Pilocarpine Nitrate ... gr. 1/10	gr. 1/20 to gr. 1/2
,,	64.	,, ,, ... gr. 1/6	
,,	33.	* ,, ,, ... gr. 1/3	
,,	32.	* ,, ,, ... gr. 1/2	
,,	82.	*Potassium Permanganate gr. 2	gr. 1 to gr. 5
,,	83.	*Quinine Bihydrochloride gr. 1	gr. 1 to gr. 5
,,	73.	* ,, ,, ... gr. 3	
,,	97.	* ,, ,, ... gr. 5	
,,	103.	*Quinine Bisulphate ... gr. 5	gr. 1 to gr. 5
,,	42.	*Quinine Hydrobromide ... gr. 1/2	gr. 1/2 to gr. 2
,,	56.	*Sparteine Sulphate ... gr. 1/2	gr. 1/2 to gr. 1
,,	52.	Strophanthin ... ... gr. 1/500	gr. 1/500 to gr. 1/100
,,	109.	Strychnine Hydrochloride gr. 1/200	gr. 1/150 to gr. 1/10
,,	110.	,, ,, ... gr. 1/100	
,,	111.	,, ,, ... gr. 1/30	
,,	62.	Strychnine Nitrate ... gr. 1/15	gr. 1/150 to gr. 1/10
,,	61.	,, ,, ... gr. 1/10	

* *In tubes of* 12 *(all others contain* 20*)*

Pharmacopœial preparations are U.S.P. unless otherwise stated

Hypodermic Products, 'Tabloid' Brand—*continued*

PREPARATION		STRENGTH	DOSE
'TABLOID' BRAND (Hypodermic)—			
No.			
,, 18.	Strychnine Sulphate	... gr. 1/150	gr. 1/150 to gr. 1/10
,, 17.	,, ,,	... gr. 1/100	
,, 16.	,, ,,	... gr. 1/60	
,, 104.	,, ,,	... gr. 1/50	
,, 99.	,, ,,	... gr. 1/40	
,, 75.	,, ,,	... gr. 1/30	
,, 123.	,, ,,	... gr. 1/20	
,, 65.	Trinitrin (Nitroglycerin)	gr. 1/250	gr. 1/250 to gr. 1/50
,, 115.	,, ,, ...	gr. 1/100	
,, 354.	*'Tyramine' (*Trade Mark*) (Para-hydroxyphenylethylamine) ...	... 0·005 gm. [gr. 1/13]	

* *In tubes of* 12 *(all others contain* 20*)*

Also various other Hypodermic products issued under the 'Tabloid' Brand.

Hypodermic Veterinary Products, 'Tabloid' Brand

(Full particulars sent on request)

Inhaler (B. W. & Co.)

Ammonium Chloride Inhaler, 'Vaporole' Brand.

A remarkably compact apparatus which will deliver perfectly neutral vapour of pure Ammonium Chloride.

'Vaporole' Acid } For use in above Inhaler.
'Vaporole' Alkali } In boxes of 12.

TRADE MARK 'KEPLER' MALT EXTRACT AND COMBINATIONS

SPECIAL CAUTION.—Many attempts are made to imitate 'Kepler' Malt Products, and it is necessary to take precautions against substitution, as malt preparations vary greatly in dietetic value. Verbal instructions are not safe. To prevent fraud it is best to write prescriptions for original bottles.

DOSE—Of all 'Kepler' preparations, one teaspoonful to two dessertspoonfuls.

PREPARATION AND STRENGTH

'KEPLER' MALT EXTRACT—

A most reliable and highly-concentrated extract, prepared from the finest winter-malted barley. Its dietetic

'Kepler' Malt Extract and Combinations—*continued*

'KEPLER' MALT EXTRACT—*continued*

value depends not only on its high diastatic powers, but also on the albuminoids, phosphates, etc., which it contains.

Ditto with BEEF AND IRON
Each fluid drachm contains Extract of Beef, gr. 1; and Iron and Ammonium Citrate, gr. $\frac{1}{8}$

Ditto with CASCARA SAGRADA
Each fluid ounce contains Extract of Cascara Sagrada, gr. 6

Ditto with HÆMOGLOBIN

Ditto with IRON
Each fluid ounce contains Soluble Iron Pyrophosphate, gr. 4

Ditto with IRON AND QUININE CITRATE
Each fluid ounce contains Iron and Quinine Citrate, gr. 7-1/2

Ditto with IRON IODIDE
Each fluid ounce contains Iron Iodide, gr. 2

Ditto with IRON, QUININE AND STRYCHNINE
Each fluid ounce contains Iron Phosphate, gr. 1/2; Quinine Phosphate, gr. 3/8; and Strychnine Phosphate, gr. 1/64

Ditto with PEPSIN
Each fluid ounce contains pure Pepsin, gr. 4

Ditto with PHOSPHORUS
Each fluid ounce contains pure Phosphorus, gr. 1/64

'KEPLER' SOLUTION (OF COD LIVER OIL IN MALT EXTRACT)—

Cod Liver Oil is the premier fatty food. It is unequalled for its power of supplying fat to the body, and for the readiness with which it is oxidised. Moreover, it enables the tissues to live and develop, to repair waste, and to effectively resist disease.

The great usefulness of cod liver oil has been largely discounted by the unpleasant effects—nausea, eructation and alimentary disturbance—which often follow the administration of even the purest oil.

'Kepler' Solution of Cod Liver Oil in Malt Extract is unique in its palatability and in the ease and completeness with which it is assimilated. It presents the purest cod liver oil incorporated in the best malt extract. The oil is thoroughly diffused in the 'Kepler' Malt Extract, and this molecular incorporation renders its digestion easy and its assimilation certain. So palatable is 'Kepler' Solution that children and fastidious patients take it readily, whilst

'Kepler' Malt Extract and Combinations—*continued*

'KEPLER' SOLUTION (OF COD LIVER OIL IN MALT EXTRACT)—*continued*

it is absorbed without difficulty by the most debilitated subjects. The high food value of this product is shown by rapid increase in the strength and weight of the patient.

Initial doses should be small and only gradually increased.

Ditto with IRON IODIDE

Each fluid ounce contains Iron Iodide, gr. 2

Ditto with PHOSPHORUS

Each fluid ounce contains Phosphorus, gr. 1/64

Also various other products issued under the 'Kepler' Brand

Lint, Pleated Compressed, 'Tabloid' Brand *(see page 151)*

Malt Extract *(see 'KEPLER,' page 161)*

Medicine Chests and Cases, 'Tabloid' Brand *(see pages 124-134)*

Menthol Snuff, Compound (B. W. & Co.)

An extremely effective and convenient combination of menthol, ammonium chloride, eucaine lactate (1/3 per cent.), etc., issued in enamelled tins, after the manner of old-fashioned black-and-gold snuff boxes.

Mercury Succinimide Outfit, The B. W. & Co.

(see Hypodermic Apparatus, *page 156)*

Methyl Alcohol (Pure)

For use in microscopic staining. In hermetically-sealed glass phials, each containing 15 c.c. (approx. ½ fl. oz.)

Microscopic Stains, 'Soloid' Brand *(see page 182)*

Mucin *(in scales)*—

A compound substance consisting of protein and a carbohydrate, given internally in those conditions in which bismuth is usually prescribed. Bottles containing 1 oz.

Nasal Medicaments, 'Soloid' Brand *(see page 178)*

Needles, for Hypodermic and Serum Syringes. *(Full list on application.)*

Needles, Urethral, silver-plated, 8-inch, with bulb the size of the point of a No. 12 French bougie.

Nessler's Solution, glass capsules of *(see* 'Soloid' Brand products, *page* 181*)*

'Nizin' *(Trade Mark)*—
A zinc salt of sulphanilic acid. An antiseptic which is readily soluble in water, and which, in the strengths recommended for use, is non-irritating and non-toxic. Bottles containing 1 oz., 4 oz., and 16 oz.

'Opa' LIQUID DENTIFRICE *(formerly known as* 'SALODENT'*)* *(Trade Mark)* Aromatic, Antiseptic, Refreshing. Bottles containing 2 Imperial fl. oz. and 4 Imperial fl. oz. (with sprinklers).

Ophthalmic Pocket-Cases, 'Tabloid' Brand *(see pages* 123 *and* 124*)*

Ophthalmic and Hypodermic Pocket-Cases, 'Tabloid' Brand *(see page* 123*)*

OPHTHALMIC PRODUCTS

TRADE MARK **'TABLOID'** BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'Tabloid' Ophthalmic products are minute in size, as thin as notepaper, and contain exact doses of pure drugs, prepared with a perfectly innocuous and rapidly soluble basis.

Exact doses

PREPARATION			STRENGTH
'TABLOID' BRAND (Ophthalmic)—			
,, T	Alum		gr. 1/250
,, EE	Argyrol		gr. 1/24
,, B	Atropine Hydrobromide		gr. 1/200
	Cocaine Hydrochloride		gr. 1/200
,, X	Atropine Sulphate		gr. 1/600
,, A	,, ,, ...		gr. 1/200
,, AA	Cocaine Hydrochloride		gr. 1/50
,, C	* ,, ,, ...		gr. 1/20

* *In tubes of* 12 *(all others contain* 25*)*

Pharmacopœial preparations are U.S.P. unless otherwise stated

Ophthalmic Products, 'Tabloid' Brand *—continued*

PREPARATION	STRENGTH
'TABLOID' BRAND (Ophthalmic)—	
,, BB Dionine	0·0005 gm. [gr. 1/130]
,, FF * ,, ...	0·005 gm. [gr. 1/13]
Eserine (*see Physostigmine*)	
,, Y *Euphthalmine Hydrochloride ...	gr. 1/40
,, Z *Fluorescein	gr. 1/250
,, H Homatropine Hydrochloride ...	gr. 1/400
,, E * ,, ,, ...	gr. 1/40
,, O * Homatropine Hydrochloride ...	gr. 1/240
Cocaine Hydrochloride	gr. 1/24
,, W * Homatropine Hydrochloride ...	gr. 1/50
Cocaine Hydrochloride	gr. 1/50
,, U Hyoscine Hydrobromide	gr. 1/600
,, GG Physostigmine Salicylate	gr. 1/2000
,, F ,, ,, ...	gr. 1/600
,, G * Physostigmine Salicylate	gr. 1/500
Tropacocaine Hydrochloride ...	gr. 1/100
,, K Pilocarpine Nitrate	gr. 1/400
,, M Pilocarpine Nitrate...	gr. 1/500
Cocaine Hydrochloride	gr. 1/200
Scopolamine (*see Hyoscine*)	
,, L *Tropacocaine Hydrochloride ...	gr. 1/30
,, R Zinc Sulphate	gr. 1/250
,, DD * Zinc Sulphate	gr. 1/250
Cocaine Hydrochloride	gr. 1/20

* *In tubes of* 12 *(all others contain* 25*)*

Also various other Ophthalmic products issued under the 'Tabloid' Brand.

OPHTHALMIC PRODUCTS

TRADE MARK **'SOLOID' BRAND**

The word 'SOLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'SOLOID' BRAND (Ophthalmic)—

,, J Corrosive Sublimate *(Hydrarg. Chlor. Corrosiv.)* gr. 1/1000, tubes of 25

For other 'Soloid' Brand products suitable for Ophthalmic use, see pages 175-180.

Ophthalmic Veterinary Products, 'Soloid' Brand

(Full particulars sent on request)

'Orsudan' (Sodium 3-Methyl-4-acetylaminophenylarsonate) *(Trade Mark)*

	DOSE
'Orsudan' is an organic arsenical preparation of but slight toxic action compared with the inorganic compounds of arsenic. It is employed in syphilis, malaria, trypanosomiasis and other protozoal diseases. 'Orsudan' is anhydrous, and is soluble in two-and-a-half parts of water at body temperature, and in four parts at 60° F. In 5 gramme and 30 gramme containers.	One to ten grains (or 0·06 gm. to 0·6 gm.) by subcutaneous or, preferably, intramuscular injection.

(*See also* 'Tabloid' 'Orsudan,' *page* 206)

'Paroleine' *(Trade Mark)* A perfectly stable, odourless, colourless and tasteless oil. It is a good solvent of many of the remedies employed in treating diseases of the nose and throat. Bottles containing 4 fl. oz. and 1 lb. (18 fl. oz.).

PASTILLES, TRADE MARK 'TABLOID' BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'Tabloid' Pastilles ensure the gradual and prolonged application to the throat and mouth of medicaments, which are presented in a most pleasant condition; they are also employed in certain cases to obtain the general effect of the drug. By their use, astringents, antiseptics, anæsthetics, expectorants and laxatives can be conveniently exhibited. The basis of the pastille is demulcent, increasing the efficacy of the active ingredients.

'TABLOID' BRAND—

No.

,, 1. Ammonium Chloride and Licorice
Each contains Ammonium Chloride, gr. 1

,, 3. Cocaine Hydrochloride, gr. 1/10

,, 4. Codeine, gr. 1/8

Pastilles, 'Tabloid' Brand—*continued*

'TABLOID' BRAND

No.

,, 2. **Codeine and Benzoic Acid Compound**

℞ Acidi Benzoici ... ... gr. 1/2
Codeinæ... ... ... gr. 1/10
Mentholis ... ... gr. 1/10
Pulv. Ipecacuanhæ ... ... gr. 1/10
Cocainæ Hydrochloridi ... gr. 1/40
Gummi Rubri ... ... gr. 1/2
Ol. Menthæ Piperitæ ... *q.s.*

,, 22. **Codeine and Benzoic Acid Compound, without Cocaine**
Similar to No. 2, but contains no Cocaine Hydrochloride

,, 5. Glycerin

,, 6. Glycerin and Black Currant

,, 7. Glycerin, Tannin and Black Currant
Each contains Tannin, gr. 1/2

,, 8. Glycerin, Tannin, Capsicum and Black Currant
Each contains Tannin, gr. 1/2, and the equivalent of Tincture of Capsicum, min. 0·40, equal to Capsicum, gr. 3/80.

,, 18. **Laxative Fruit**
Each contains Extract of Senna Fruit, gr. 5, pleasantly flavoured. The 'Tabloid' Pastille is extremely palatable, and facilitates the administration, to children and fastidious patients, of an efficient laxative.

,, 10. Lemon Juice

,, 11. Linseed, Licorice and Chlorodyne
Each contains Morphine Hydrochloride, gr. 1/120

,, 16. Menthol, gr. 1/8

,, 17. Menthol and Eucalyptus

℞ Mentholis ... ... gr. 1/20
Olei Eucalypti... ... ... min. 1/2

,, 12. Morphine and Ipecac

℞ Morphinæ Hydrochloridi ... gr. 1/36
Pulv. Ipecacuanhæ ... ... gr. 1/12

,, 20. **Pectoral**
Containing Ammoniated Licorice, Squill, Tolu, Senega, Ipecac, Wild Black Cherry, etc.

,, 19. Pine Tar Compound
Containing Pine Tar, Terebene, Benzoin, Tolu, Ipecac, etc.

,, 13. 'Pinol,' min. 1

,, 14. Red Gum and Cocaine

℞ Gummi Rubri ... ... gr. 1
Cocainæ Hydrochloridi ... gr. 1/20

,, 15. Rhatany (Krameria), Menthol and Cocaine

℞ Ext. Krameriæ ... ... gr. 2
Mentholis ... ... gr. 1/20
Cocainæ Hydrochloridi ... gr. 1/20

Also various other Pastilles issued under the 'Tabloid' Brand

'Phenofax' BRAND CARBOLIC ACID OINTMENT

(Trade Mark) 'PHENOFAX' is an antiseptic sedative dressing which presents 4 per cent. of pure phenol in a bland basis, and is notable for its sedative effect on the skin and mucous surfaces. It disinfects, allays pain, and encourages granulation. Issued in glass pots.

PHOTOGRAPHIC CHEMICALS

TRADE MARK 'TABLOID' BRAND

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. This brand should always be specified when ordering.

'Tabloid' Photographic Chemicals represent the acme of convenience and reliability, while their superior quality and accuracy in weight and composition ensure the best results. They entirely obviate the trouble of weighing small quantities of chemicals and the disappointments occasioned by the deterioration of stock solutions. They enable the tourist to carry all the requisite materials for developing, fixing, etc., with convenience, comfort and safety. At home they save time and trouble.

Pure and reliable

Developers

The developers are packed in cartons, each containing the 'Tabloid' Reducing Agent, and the 'Tabloid' Accelerator specially prepared for use with that reducing agent.

'TABLOID' BRAND
(Photographic)—

- ,, Amidol Developer
- ,, Edinol Developer
- ,, Eikonogen Developer
- ,, Glycin Developer
- ,, Hydroquinone (Quinol) Developer
- ,, Metol Developer
- ,, Metol-Quinol Developer
- ,, Ortol Developer
- ,, Paramidophenol Developer
- ,, Pyro Developer
- ,, Pyro-Metol Developer *(Imperial Standard Formula)*

Photographic Chemicals, 'Tabloid' Brand—*continued*

Developers—*continued*

'TABLOID' BRAND (Photographic)—

,, *Pyro-Soda Developer *(Ilford Formula)*

,, **'Rytol'** *(Trade Mark)* Universal Developer

* In ordering this special developer, it is always necessary to quote "Ilford formula."

Intensifiers

'TABLOID' BRAND—(Photographic)—

,, Chromium Intensifier

,, Mercuric Iodide and Sodium Sulphite

Toners

'TABLOID' BRAND (Photographic)—

,, Gold Chloride, gr. $\frac{1}{2}$, with Borax, gr. 15 (B 1)

,, ,, ,, ,, Sodium Bicarbonate, gr. 15 (B 2)

,, ,, ,, ,, Sodium Phosphate, gr. 15 (B 3)

,, ,, ,, ,, Sodium Tungstate, gr. 15 (B 4)

,, ,, ,, ,, Sodium Formate Compound (B 5)

,, ,, ,, ,, Sulphocyanide Compound (B 6)

,, ,, ,, ,, Thiosulphate Compound *(Combined Bath for toning and fixing P.O.P.)* (B 10)

The above are supplied in cartons containing sufficient for the preparation of six toning baths of 5 to 10 ounces or more. For convenience they may be ordered by their numbers, thus: 'Tabloid' Gold Toning, B 1, B 2, etc.

,, Bleaching Compound

,, Copper Ferrocyanide Toning Compound *(for toning Bromide Prints and Lantern Slides)*

,, Platinum Toning Compound *(for toning Matt P.O.P.)*

,, Sepia Toner *(for Bromide Prints and Lantern Slides)*

,, Sulphiding Compound

Accessories

'TABLOID' BRAND (Photographic)— STRENGTH

,, *Alkali*—

'Tabloid' Sodium Carbonate ... ... gr. 44

Photographic Chemicals, 'Tabloid' Brand—*continued*

Accessories—*continued*

'TABLOID' BRAND (Photographic)—	STRENGTH
,, *Density Reducers*—	
'Tabloid' Ammonium Persulphate ...	gr. 11
'Tabloid' Potassium Ferricyanide ...	gr. 2
,, *Fixer*—	
'Tabloid' Sodium Thiosulphate (Hypo), Dried, gr. 28·5	Equals gr. 44 of crystals
,, *Hardener*	
'Tabloid' Alum	gr. 10
,, *Hardener and Clearer*—	
'Tabloid' Alum and Citric Acid Compound (Chrome Alum, gr. 5; Citric Acid, gr. 5)	
,, *Preservatives*—	
'Tabloid' Potassium Metabisulphite ...	gr. 10
'Tabloid' Sodium Sulphite, Dried, gr. 5	Equals gr. 10 of crystals
,, *Restrainers*—	
'Tabloid' Ammonium Bromide ...	gr. 1
'Tabloid' Potassium Bromide	gr. 1
'Tabloid' Sodium Citrate	gr. 1
,, *Sensitiser (for carbon tissue, etc.)*—	
'Tabloid' Potassium Ammonium Chromate	gr. 24

For Ozobrome Process

'TABLOID' BRAND (Photographic)—
,, Ozobrome Pigmenting Compound.

Also various other Photographic products issued under the 'Tabloid' Brand.

PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, THE 'WELLCOME'

The most useful pocket-book for the photographer. Contains ruled pages for recording exposures, a diary for the year, also numerous technical articles and tables, and an exposure calculator which tells the correct exposure under any circumstance by ONE turn of ONE scale, etc., etc.

Photographic Exposure Record and Diary, The 'Wellcome' *—continued*

U.S.A. Edition. Bound in red canvas.

Also issued:

Southern Hemisphere and Tropical Edition, for all countries south of the Tropic of Cancer (about 20° N.). Bound in dark green canvas.

Northern Hemisphere Edition, for Canada, Europe, and all countries in the Northern Hemisphere except United States of America. Bound in light green canvas.

Each Edition complete with wallet for proofs, etc., and pencil.

PHOTOGRAPHIC OUTFIT, No. 905

TRADE MARK **'TABLOID'** BRAND

A complete and compact chemical outfit for developing and fixing plates, films, bromide or gaslight papers, and for toning and fixing P.O.P.

Standard Contents:—

'Tabloid' 'Rytol' Universal Developer, to make 80 ounces of solution; 'Tabloid' Sodium Thiosulphate (Hypo); 'Tabloid' Chromium Intensifier, to make 50 ounces of solution; 'Tabloid' Gold Chloride with Thiosulphate Compound (Combined Bath), to make 30 ounces of solution; 'Tabloid' Sepia Toner.

(Contents may be varied as desired.)

Measurements: 4 × 4 × 2⅛ in. In rex red, royal blue, imperial green or bright scarlet enamelled metal, or in black japanned metal.

(When ordering, please specify colours desired)

'Pinol' *(Distilled Essence of Pinus pumilio)*
(Trade Mark)

A valuable stimulant, disinfectant and antiseptic in respiratory affections. The 'Tabloid' Pastille *(see page* 167) affords a pleasant means of securing prolonged continuous local action.

In ½ Imperial fl. oz. and 1 Imperial fl. oz. bottles.

Saccharin, 'Tabloid' Brand *(see page 212)*
(See also 'Tabloid' 'Saxin,' page 213)

Saline Solutions for Intravenous Injection *(see page 179)*

SANITARY TOWELS, PLEATED COMPRESSED, TRADE MARK 'TABLOID' BRAND

Pleated Compressed Sanitary Towels were originated and introduced by Burroughs Wellcome & Co.

'TABLOID' Pleated Compressed Sanitary Towels possess several points of superiority over ordinary sanitary towels. They are made of materials of exceptional quality specially adapted for the purpose. Their highly absorbent properties are particularly noteworthy. The delicate texture of the surface of these towels ensures perfect freedom from the slightest sense of discomfort in use. Owing to the extremely small space which they occupy, they are particularly convenient when travelling. Extreme compactness is secured by compression, and perfect cleanliness ensured by the method of packing.

'Tabloid' Pleated Sanitary Towel (No. 4) Half size

Five sizes are issued, each size in packages of 12

'Saxin,' (*see* 'Tabloid' 'Saxin,' *page* 213)
(Trade Mark)

SERA, TRADE MARK 'WELLCOME' BRAND

The word 'WELLCOME' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of these pure and reliable preparations, this brand should always be specified when ordering.

Reputation

The high reputation which these sera have with the medical profession is constantly confirmed by the favourable reports received, and the accumulating evidence proves this high reputation to be deserved.

Sera, 'Wellcome' Brand—*continued*

'Wellcome' Brand Sera are prepared under U.S.A. Government Licence, No. 18, in the Wellcome Physiological Research Laboratories, Brockwell Hall, London, England, under conditions which fulfil every requirement of modern science and under the immediate supervision of specialists of long and varied experience. The sera are not sent out until they have successfully passed rigorous sterility and toxicity tests ; they are then issued in hermetically-sealed phials of convenient sizes.

Tests

Burroughs Wellcome & Co. act as distributing agents, and will endeavour to despatch orders for these sera immediately on receipt of letter or telegram.

Sera should be carefully kept in their original packings, in a cool dark place, avoiding, as much as possible, variations of temperature.

'WELLCOME' BRAND—

,, Diphtheria Antitoxic Serum

Phials containing 1000, 2000, 3000 and 4000 (Ehrlich-Behring) units.

The same doses are also supplied in Syringe-containers.

High Potency :

Phials containing 1, 2, 3, 4 and 5 c.c., each c.c. being equivalent to 1000 Ehrlich-Behring units.

The following Sera are issued in hermetically-sealed phials.

,, ***Anti-gonococcus Serum :** from strains of gonococci obtained from cases of urethritis and gonorrhœal conjunctivitis.
In phials containing 25 c.c.

,, ***Anti-staphylococcus Serum, Polyvalent :** from horses immunised against various cultures of *Staphylococcus pyogenes aureus*, *albus*, *citreus* and *hæmorrhagicus* :—
In phials containing 25 c.c.

,, ***Anti-streptococcus Serum, Erysipelas :** from horses immunised against cultures from typical cases of erysipelas :—
In phials containing 25 c.c.

* *See note on next page*

Sera, 'Wellcome' Brand—*continued*

'WELLCOME' BRAND

„ ***Anti-streptococcus Serum, Polyvalent:** from horses immunised against cultures of streptococci coming in all from 60 sources, in the following diseases:—

ERYSIPELAS, SCARLET FEVER, PUERPERAL FEVER, RHEUMATIC FEVER, SEPTICÆMIA, ANGINA, PNEUMONIA, ULCERATIVE ENDOCARDITIS.

In phials containing 10 c.c. and 25 c.c.

„ ***Anti-streptococcus Serum, Puerperal Fever:** from horses immunised against over 20 cultures of *Streptococcus* from cases of puerperal fever:—

In phials containing 25 c.c.

„ ***Anti-streptococcus Serum, Pyogenes:** from horses immunised against 9 different strains of *Streptococcus pyogenes*:—

In phials containing 25 c.c.

„ ***Anti-streptococcus Serum, Rheumatic Fever:** from horses immunised against cultures from severe cases of acute rheumatism and of rheumatoid arthritis:—

In phials containing 25 c.c.

„ ***Anti-streptococcus Serum, Scarlatina:** from horses immunised against cultures from 9 severe (some fatal) cases of scarlet fever:—

In phials containing 25 c.c.

„ ***Anti-typhoid Serum:** from horses immunised against cultures of *Bacillus typhosus* from several cases of typhoid fever:—

In phials containing 25 c.c.

*Phials containing 50 c.c. of Polyvalent Anti-streptococcus Serum and 10 c.c. and 50 c.c. of the others are supplied to special order only.

Also various other Sera issued under the 'Wellcome' brand

Serum Syringes (B. W. & Co.) *(see page 156)*

'Soamin' (Sodium Para-aminophenylarsonate)
(Trade Mark)

DOSE

An organic preparation of low toxicity as compared with arsenous acid or the inorganic salts of arsenic. It contains 22·8 per cent. of arsenium (As), and is soluble in three parts of water at body temperature and in five parts at 60° F. Used in syphilis, malaria, kala-azar, trypanosomiasis and other protozoal diseases. In bottles of 5 gm. and 30 gm. — *See special leaflet*

(*See also* 'Tabloid' 'Soamin,' *page* 213)

For full particulars, see 'Soamin' booklet

Soap, 'Hazeline.' *(See page* 155*)*

TRADE MARK 'SOLOID' BRAND PRODUCTS

The word 'SOLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

The series of 'Soloid' Brand products provides reliable antiseptics, astringents and anæsthetics; also convenient means of preparing stains for microscopic work, and test solutions for water, sewage or urine analysis. Their portability, accuracy in strength, uniform activity and ready solubility render them far preferable to stock solutions.

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	bots. of
,, Alkaline Compound *(see page* 178*)*			
,, Alum	gr. 10	—	100
,, Alum and Zinc Sulphate ...		25	—
℞ Aluminis	gr. 15		
Zinci Sulphatis ...	gr. 15		
,, Alum and Zinc Compound, Strong		25	—
℞ Aluminis	gr. 30		
Zinci Sulphatis ...	gr. 15		

'Soloid' Brand Products are also issued in bottles of 500, *with the exception of those put up in tubes only.*

Pharmacopœial preparations are U.S.P. unless otherwise stated

'Soloid' Brand Products—*continued*		Issued in bots. of	bots. of
'SOLOID' BRAND—	STRENGTH		
,, Antiseptic and Alkaline Compound (*see page* 178)			
,, Argyrol, tubes of 12	gr. 1	—	—
,, ,, tubes of 6	gr. 5·45	—	—
,, Atropine Sulphate, tubes of 6	gr. 0·545	—	—
,, Atropine and Cocaine, tubes of 6		—	—
℞ Atropinæ Sulphatis gr. 0·272 Cocainæ Hydrochloridi gr. 1·09			
,, Black Lotion (Black Wash) (*see* Mercurial Compound, *page* 177)			
,, Boric Acid *(scented with Otto of Rose)*	gr. 6	25	—
,, Boric Acid *(unscented)* ...	gr. 15	50	250
,, Boric Acid and Zinc Sulphate *(scented with Otto of Rose)*		25	—
℞ Acidi Borici ... ... gr. 6 Zinci Sulphatis ... gr. 1/2			
,, Carbolic Acid (Phenol), tubes of 25	gr. 5	—	—
,, ,, ,, ,, 12	gr. 20	—	—
,, ,, ,, ,, 6	gr. 60	—	—
,, Cocaine Hydrochloride, tubes of 25	gr. 1/2	—	100
,, Cocaine Hydrochloride ...	gr. 1	25	100
,, ,, ,, ...	gr. 5	25	—
,, Cocaine and Eucaine, of each	gr. 1/2	25	—
,, Copper Sulphate	gr. 1	—	100
,, Corrosive Sublimate (Hydrarg. Chlor. Corrosiv.) *(Ophthalmic)*, tubes of 25 ... ... (*See page* 165)	gr. 1/1000	—	—
,, Corrosive Sublimate (Hydrarg. Chlor. Corrosiv.)	gr. 1·825	—	100
One in 4 fluid ounces of water = 1 in 1000 solution. One in one pint (16 fluid ounces) of water = 1 in 4000 solution.			
,, Corrosive Sublimate (Hydrarg. Chlor. Corrosiv.)	gr. 7·3	25	100
One in one pint (16 fluid ounces) of water = 1 in 1000 solution.			

'Soloid' Brand Products are also issued in bottles of 500, *with the exception of those put up in tubes only.*

Pharmacopœial preparations are U.S.P. unless otherwise stated

'Soloid' Brand Products—*continued*

'SOLOID' BRAND—	STRENGTH	Issued in bots. of	bots. of
,, Corrosive Sublimate (Hydrarg. Chlor. Corrosiv.) ... ... One in one pint (16 fluid ounces) of water = 1 in 500 solution.	gr. 14·6	—	100
,, Eucaine Hydrochloride ...	gr. 1	25	—
,, ,, ,, ...	gr. 5	25	—
,, Eucaine Lactate	gr. 1	25	—
,, ,, ,, ...	gr. 5	25	—
,, 'Eucalyptia' Compound (*see page* 178)			
,, Homatropine and Cocaine, tubes of 6 ... ... R Homatropinæ Hydrobromidi ... ... gr. 0·545 Cocainæ Hydrochloridi ... ... gr. 1·09		—	—
,, Homatropine Hydrobromide, tubes of 6	gr. 0·545	—	—
,, Homatropine Methylbromide and Cocaine, tubes of 6 ... R Homatropinæ Methylbromidi ... ... gr. 0·545 Cocainæ Hydrochloridi ... ... gr. 1·09		—	—
,, Hydrarg. Chlor. Corrosiv. (*see* Corrosive Sublimate, *page* 176)			
,, Iodic-Hydrarg. (*see* Mercuric Potassium Iodide, *page* 178)			
,, Lead and Opium ... ... One, added to one ounce of hot water, yields a lotion of same strength as the N.F. Lotio Plumbi et Opii.		25	—
,, Lead Subacetate ... ... One in 2½ fl. oz. of distilled water yields a 1 per cent. (approx.) solution, corresponding to Liquor Plumbi Subacetatis Dilutus.	gr. 11·5	25	—
,, Mercurial Compound, for the preparation of Black Lotion One in 6 fluidrachms of distilled water yields a solution corresponding to Lotio Nigra, N.F.		25	—

'Soloid' Brand Products are also issued in bottles of 500, *with the exception of those put up in tubes only.*

Pharmacopœial preparations are U.S.P. unless otherwise stated

'Soloid' Brand Products *continued*		Issued in bots. of	bots. of
'SOLOID' BRAND—	STRENGTH		
,, Mercuric Potassium Iodide (*formerly known as* Iodic-Hydrarg.)	gr. 1·825	—	100
One in 4 fluid ounces or one in one pint (16 fluid ounces) of water yield respectively solutions of 1 in 1000 and 1 in 4000 (frequently known as Mercury Biniodide Solution).			
,, Mercuric Potassium Iodide (*formerly known as* Iodic-Hydrarg.)	gr. 7·3	25	100
One in 16 fluid ounces of water = 1 in 1000 solution (frequently known as Mercury Biniodide Solution).			
,, Mucin and Menthol Compound		25	100
℞ Mucini ... ... gr. 4-1/2 Sodii Bicarbonatis gr. 4-1/2 Mentholis ... ... gr. 1/20			
,, (Nasal)			
,, ,, Alkaline Compound ...		—	100
℞ Sodii Boratis ... gr. 5 Sodii Chloridi ... gr. 5			
,, ,, Antiseptic and Alkaline Compound		—	100
℞ Sodii Bicarbonatis gr. 5 Phenolis ... ... gr. 1/2 Sodii Boratis ... gr. 5			
,, ,, 'Eucalyptia' Compound		—	100
℞ Sodii Bicarbonatis gr. 8 Sodii Boratis ... gr. 8 Sodii Benzoatis ... gr. 1/3 Sodii Salicylatis gr. 1/3 Eucalyptolis ... min. 1/6 Thymolis... ... gr. 1/6 Mentholis ... gr. 1/12 Ol. Gaultheriæ ... min. 1/12			
,, ,, Phenol Compound ...		25	—
℞ Sodii Bicarbonatis gr. 12 Phenolis ... ... gr. 1-1/2 Sodii Chloridi ... gr. 2			
,, ,, Sodium Bicarbonate Compound		—	100
℞ Sodii Bicarbonatis gr. 5 Sodii Boratis ... gr. 5 Sodii Chloridi ... gr. 5			

'Soloid' Brand Products are also issued in bottles of 500, *with the exception of those put up in tubes only.*

Pharmacopœial preparations are U.S.P. unless otherwise stated

'Soloid' Brand Products—*continued*		Issued in bots. of	bots. of
'SOLOID' BRAND—	STRENGTH		
.. (Nasal)—*continued*—			
,, .. Sodium Bicarbonate Compound, Saccharated		—	100
℞ Sodii Bicarbonatis gr. 5 Sodii Boratis ... gr. 5 Sodii Chloridi ... gr. 5 Sacchari Albi ... gr. 5			
,, Naso-Pharyngeal Compound		25	100
℞ Sodii Chloridi ... gr. 7 Sodii Boratis ... gr. 2-1/2 Acidi Borici ... gr. 3/4 Sodii Benzoatis ... gr. 1/2 Mentholis ... ... gr. 1/50 Thymolis ... ... gr. 1/100 Cocainæ Hydrochloridi gr. 1/6 Ol. Gaultheriæ ... min. 1/20			
,. 'Nizin' (*Trade Mark*) ...	gr. 2	—	100
,, ,, ,, ...	gr. 20	25	—
A zinc salt of sulphanilic acid			
,, Paraform	gr. 5	—	100
.. Phenol (*see* Carbolic Acid, *page* 176)			
,, Potassium Permanganate ...	gr. 1	—	100
,, ,, ,, ...	gr. 5	25	100
,, Potassium Permanganate and Alum		—	100
℞ Potassii Permanganatis gr. 3 Aluminis ... ... gr. 5			
,, Saline Compound, tubes of 12		—	—
℞ Calcii Chloridi ... gr. 7/10 Potassii Chloridi ... gr. 7/10 Sodii Chloridi ... gr. 31-1/2 Sodii Bicarbonatis... gr. 7/20 Dextrosi ... ... gr. 3-1/2			
,, Silver Nitrate	gr. 1	25	—
,, ,, ,, ...	gr. 5	25	—
,, Sodium Bicarbonate	gr. 44	25	—
One in 5 fluid ounces of water = 2 per cent. solution (approx.)			
,, Sodium Bicarbonate Compound (*see page* 178)			
,, Sodium Bicarbonate Compound, Saccharated (*see above*)			

'Soloid' Brand Products are also issued in bottles of 500, *with the exception of those put up in tubes only.*

Pharmacopœial preparations are U.S.P. unless otherwise stated

'Soloid' Brand Products—*continued*		Issued in bots. of	bots. of
'SOLOID' BRAND—	STRENGTH		
,, Sodium Chloride, tubes of 12 Two dissolved in 16 fluid ounces of boiled (sterile) water, for intravenous injection at 100° F. (37·8° C.), give a solution containing 0·9 per cent. of sodium chloride.	gr. 32	—	—
,, Sodium Chloride, tubes of 6 One in 16 fluid ounces of boiled (sterile) water, for intravenous injection at 100° F. (37·8° C.)	gr. 64	—	—
,, Sodium Citrate and Sodium Chloride ... ... ℞ Sodii Citratis ... ... gr. 3 Sodii Chloridi ... ... gr. 16		25	100
,, Zinc Chloride	gr. 5	25	—
,, Zinc Permanganate	gr. 1/8	—	100
,, Zinc Sulphate	gr. 1	—	100
,, ,, ,, ...	gr. 10	—	100
,, Zinc Sulphocarbolate (Phenol-sulphonate)	gr. 2	—	100
,, ,, ,, ...	gr. 10	—	100

Also a wide range of other products issued under the 'Soloid' Brand.

'SOLOID' BRAND PRODUCTS FOR TESTING PURPOSES, etc.

For Urine Analysis

'SOLOID' BRAND—	STRENGTH	Issued in tubes of
,, Citric Acid	gr. 1	20
,, Fehling's Test, *for preparing Fehling's Solution*, cartons of 24		
,, Indigo Test for Sugar (Sodium Nitrophenylpropiolate)	gr. 1/4	20
,, Picric Acid	gr. 1	20
,, Potassium Ferrocyanide	gr. 1	20
,, Salicyl-sulphonic Acid	gr. 2	16

'Soloid' Brand Products are also issued in bottles of 500, *with the exception of those put up in tubes only.*

Pharmacopœial preparations are U.S.P. unless otherwise stated

'Soloid' Brand Products for Testing Purposes, etc.—*continued*

For Water Analysis

'SOLOID' BRAND—	STRENGTH
,, Ammonium Chloride...	0·00016 gm.
,, Lead Acetate	0·0184 gm.
,, Meta-phenylenediamine Sulphate	0·01 gm.
,, Oxalic Acid	0·1 gm.
,, Potassium Chromate...	0·0065 gm.
,, Potassium Ferrocyanide	0·013 gm.
,, Potassium Nitrate	0·00144 gm.
,, Potassium Permanganate	0·00395 gm.
,, Silver Nitrate...	0·0097 gm.
,, Soap	
,, Sodium Acid Sulphate	0·324 gm.
,, Zinc Dust	0·13 gm.
,, Zinc Sulphide	0·25 gm.

In packages of 25

,, Nessler's Solution, in hermetically-sealed glass capsules.

Boxes of 30 capsules, each containing ...	0·5 c.c.
,, 24 ,, ,, ...	2 c.c.

For Sewage Analysis

'SOLOID' BRAND—	STRENGTH
,, Oxalic Acid	0·0079 gm.
,, Potassium Permanganate	0·00395 gm.
,, Pyrogallic Acid	0·032 gm.
,, Sodium Hydroxide	0·13 gm.

In packages of 25

Test Indicators

'SOLOID' BRAND—	STRENGTH
,, *Indigo-Carmine	
,, *Lacmoid	
,, *Methyl-Orange	
,, *Phenolphthalein	
,, *Rosolic Acid	
,, Starch	0·5 gm.

* One dissolved in 10 c.c. of solvent forms the Test Indicator.

In tubes of 10

'Soloid' Brand Products for Testing Purposes, etc.—*continued*

Microscopic Stains

'SOLOID' BRAND—	STRENGTH
,, Bismarck Brown, pure	0·1 gm.
,, Borax Methylene Blue	
,, Ehrlich Triple Stain	
,, Eosin, pure	0·1 gm.
,, Eosin-Azur (for Giemsa staining with one solution)	0·038 gm.
,, Eosin-Methylene Blue (Louis Jenner's Stain)	0·05 gm.
,, Fuchsine (Basic), pure	0·1 gm.
,, Gentian Violet, pure	0·1 gm.
,, Gram's Iodine Solution	15 c.c.
,, Hæmatoxylin (Delafield)	
,, Hæmatoxylin, pure	0·1 gm.
,, Methyl Violet, pure	0·1 gm.
,, Methylene Blue, pure	0·1 gm.
,, Romanowsky Stain (Leishman's Powder) ...	0·015 gm.
,, Romanowsky Stain (Wright's Modification)	0·05 gm.
,, Sodium Carbonate	0·05 gm.
,, Thionin Blue, pure	0·1 gm.
,, Toison Blood Fluid	

In tubes of 6

Methyl Alcohol (pure). *(See page* 163*)*

Also a wide range of other products issued under the 'Soloid' Brand.

Strophanthus Tincture (B. W. & Co.)

(Physiologically standardised in the Wellcome Physiological Research Laboratories.)

Prepared in accordance with the United States Pharmacopœia (Eighth Revision), from carefully-selected strophanthus seeds.

In Bottles containing 1, 4, 8 and 16 fluid ounces.

Strophanthus, 'Tabloid' Brand (*see page* 215)

Suppositories (*see* 'Enule' Rectal Suppositories, *pages* 152-154; *and* 'Hazeline' Suppositories, *page* 155)

Surgical Dressings, Pleated Compressed, 'Tabloid' Brand (*see pages* 149–151)

Syringes, Hypodermic and Serum (*see pages* 155, 156)

TRADE MARK 'TABLOID' BRAND PRODUCTS

The word 'TABLOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified on prescriptions.

'Tabloid' Brand Products are also issued in bottles of 500, with the exception of those put up in tubes only.

Under the 'Tabloid' Brand is issued an immense variety of drugs and their combinations, all prepared from the purest ingredients. When using them the physician has power to administer at any moment the exact dose required, and that without any measuring or weighing. They keep unchanged in any climate. Owing to their extreme portability, supplies may be comfortably carried in the waistcoat-pocket, and doses taken regularly whilst following the usual routine of social, professional or commercial life. 'Tabloid' Brand products of unpleasant drugs are coated with a thin film of white sugar, readily soluble in the stomach, while those intended to act after leaving the stomach are coated with keratin, soluble only in the alkaline secretions of the intestine.

Accurate dosage

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
A			
,, Acetanilide *(see* Antifebrin*)*			
,, Aconite, each containing the solid ingredients of Tincture of Aconite, min. 1/4 ...	1 frequently	100	—
,, Aconite, each containing the solid ingredients of Tincture of Aconite, min. 1	1 frequently	100	—
,, Aconite, each containing the solid ingredients of Tincture of Aconite, min. 5	1 to 3	36	100
,, Aloes and Iron ... ... Each product equals one of the U.S.P. pills.	1 to 2	—	100
,, Aloes and Myrrh ... ... Each product equals one of the U.S.P. Pills.	1 to 2	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Aloin, gr. 1/10	1 frequently	100	—
,, ,, gr. 1/2	1 to 4	25	100
,, Aloin Compound	1 to 2 after meals, or 1 to 3 at bed-time	50	100
℞ Aloini ... ... gr. 1/5 Strychninæ Sulphatis ... ... gr. 1/60 Ext. Belladonnæ ... gr. 1/8 Pulv. Ipecacuanhæ gr. 1/16 Stomachic and tonic laxative combination of especial value in chronic constipation.			
,, Ammoniated Quinine ...	1	25	100
Each contains Quinine Sulphate and Ammonium Bicarbonate to correspond with one fluidrachm of the tincture.			
,, Ammonium Bromide, gr. 5 ...	1 to 6	—	100
,, ,, ,, gr. 10	1 to 3	—	100
,, Ammonium Carbonate, gr. 3	1 to 3	—	100
,, Ammonium Chloride, gr. 3...	1 to 6	25	100
,, ,, ,, gr. 5...	1 to 4	—	100
,, ,, ,, gr. 10	1 to 2	—	100
,, Ammonium Chloride and Borax	1 as required	—	100
,, Ammonium Chloride and Liquorice	1 as required	25	100
℞ Ammonii Chloridi... gr. 3 Ext. Glycyrrhizæ ... gr. 2			
,, Ammonium Chloride Compound	1 as required	25	100
℞ Ammonii Chloridi... gr. 1 Potassii Chloratis ... gr 2 Pulv. Cubebæ ... gr. 1/4 Ext. Glycyrrhizæ ... gr. 1			
,, Ammonium Hippurate, gr. 1	1 or more	—	100
,, Antifebrin (Acetanilide), gr. 2	1 to 2	25	100
,, ,, ,, gr. 5	1 *(in special cases)*	25	100
,, Antifebrin Compound ...	1	—	100
℞ Acetanilidi (Antifebrini) ... .. gr. 2 Camphoræ Monobromatæ ... ... gr. 1 Caffeinæ Citratis ... gr. 1			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Antimony Compound Pill (Plummer Pill) N.F., gr. 4 Each contains approximately: Sulphurated Antimony, gr. 1; Mild Mercurous Chloride, gr. 1; Guaiac, gr. 2.	1 to 2	25	100
,, Antimony and Potassium Tartrate (Tartar Emetic), gr. 1/50...	1 to 3	100	—
,, Antipyrine (Phenazone), gr. 2-1/2	1 to 4 or more	25	100
,, ,, ,, gr. 5	1 to 4	25	100
,, Antipyrine Compound ... ℞ Antipyrini (Phenazoni) ... gr. 3 Caffeinæ ... ... gr. 1 Pure in content, accurate in dosage, quick to disintegrate.	1 to 4	25	100
,, 'Aol' *(Trade Mark)*, 0·3 gm., (Capsule), a derivative of *Santalum album*, boxes of 50	2 or more		
,, Apomorphine Compound ... ℞ Apomorphinæ Hydrochloridi gr. 1/50 Ammonii Chloridi gr. 3 Ext. Glycyrrhizæ gr. 1-1/2	1 as required	25	100
,, Apomorphine Hydrochloride, gr. 1/50	1 to 3 *(expectorant)*	50	—
,, Arsenic Trioxide (Arsenous Acid), gr. 1/100 ...	1 to 6	100	—
,, ,, ,, gr. 1/50 ...	1 to 3	100	—
,, ,, ,, gr. 1/20 ...	1	100	—
,, Arsenical Compound... ... ℞ Arseni Trioxidi ... gr. 1/100 Ferri Sulphatis Exsiccati gr. 1 Calcii Sulphidi ... gr. 1/4 Ext. Gentianæ ... gr. 2	1 to 2	—	100
,, Arsenous Iodide and Mercuric Iodide... ... ... One represents min. 5 of Liq. Arseni et Hydrargyri Iodidi (Donovan Solution) containing Arsenous and Mercuric Iodides, of each gr. 1/21 (approx.)	1 to 4	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Asafetida and Opium Compound	1 to 2	—	100
℞ Asafœtidæ, Camphoræ, Pulv. Opii, Pulv. Piperis Nigri āā gr. 1			
,, 'Aspirin,' gr. 5	1 to 5	25	100
,, Atropine Sulphate, 0·0005 gm. (gr. 1/130)	1	25	—
B			
,, Belladonna Extract, each containing the solid ingredients of Tincture of Belladonna Leaves... ... min. 1	1 frequently	100	—
,, Belladonna Extract, each containing the solid ingredients of Tincture of Belladonna Leaves... ... min. 5	1 to 3	48	100
,, Benzoic Acid, gr. 5	1 to 3	—	100
,, Benzonaphthol, gr. 5 ...	1 to 2	—	100
,, Betanaphthol, gr. 3	1 to 3	—	100
,, Betanaphthol Compound ...	1 to 4	25	100
℞ Betanaphtholis ... gr. 1 Carbonis Ligni ... gr. 4 Ol. Menthæ Piperitæ ... min. 1/2			
,, Bismuth and Dover Powder	1 to 6	—	100
℞ Bismuthi Subnitratis ... gr. 2-1/2 Pulv. Ipecacuanhæ et Opii ... gr. 2-1/2			
,, Bismuth and Soda	1 to 4 or more	—	100
℞ Bismuthi Subnitratis... gr. 2-1/2 Sodii Bicarbonatis gr. 2-1/2			
,, Bismuth, Rhubarb and Soda...	1 to 4	25	100
℞ Bismuthi Subnitratis ... gr. 3 Pulv. Rhei... ... gr. 1 Sodii Bicarbonatis gr. 2 Pleasant and easy to take. By its use the unpleasantness of the ordinary nauseous mixture is avoided.			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Bismuth Subcarbonate, gr. 5	1 to 4	25	100
,, Bismuth Subgallate, gr. 5 ...	1 to 4	25	100
,, Bismuth Subnitrate, gr. 5 ...	1 to 4	25	100
,, ,, ,, gr. 10 ...	1 to 2	—	100
,, Bismuth Subsalicylate (*Physiologically Pure*), gr. 5 ...	1 to 4	—	100
,, Blaud (Pil. Ferrugin.), gr. 5 ...	1 to 3	—	100
,, ,, ,, gr. 10 ...	1 to 2	—	100
Permanently representing 20 per cent. of ferrous carbonate.			
,, Blaud Pill and Aloin	1 to 4	—	100
℞ Pil. Ferrugin. (Blaud) ... gr. 5 (= 20 % Ferri Carbonatis) Aloini ... ... gr. 1/20			
,, Blaud Pill and Arsenic ...	1 to 4	—	100
℞ Pil. Ferrugin. (Blaud) ... gr. 5 (= 20 % Ferri Carbonatis) Arseni Trioxidi ... gr. 1/64			
,, Blaud Pill, Arsenic and Strychnine	1 to 4	—	100
℞ Pil. Ferrugin. (Blaud)... gr. 5 (= 20 % Ferri Carbonatis) Arseni Trioxidi ... gr. 1/100 Strychninæ ... ... gr. 1/100			
,, Blaud Pill and Cascara ...	1 increased to 4	—	100
℞ Pil. Ferrugin. (Blaud)... gr. 5 (= 20 % Ferri Carbonatis) Ext. Cascaræ Sagradæ ... gr. 1/2			
,, Blaud Pill Compound ...	1	—	100
℞ Pil. Ferrugin. (Blaud)... gr. 10 (= 20 % Ferri Carbonatis) Pulv. Capsici ... gr. 1/4 Aloini ... ... gr. 1/30 Strychninæ ... ... gr. 1/30 Arseni Trioxidi ... gr. 1/30			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Blaud Pill, Nux Vomica and Cascara	1 to 4	—	100
℞ Pil. Ferrugin. (Blaud)... gr. 3 (= 20 % Ferri Carbonatis) Ext. Nucis Vomicæ gr. 1/10 Ext. Cascaræ Sagradæ gr. 1			
,, Blue Pill, gr. 4	1 to 2	25	100
Each contains gr. 1-1/3 of pure Metallic Mercury.			
,, Blue Pill and Rhubarb Compound	1 to 2	—	100
℞ Pil. Hydrargyri ... gr. 2-1/2 Pil. Rhei Comp. ... gr. 2-1/2			
,, Blue Pill, Colocynth and Hyoscyamus	1 to 2	25	100
℞ Pil. Hydrargyri ... gr. 2 Pil. Colocynthidis et Hyoscyami ... gr. 4			
,, Blue Pill, Squill and Digitalis	1 to 2	—	100
℞ Pil. Hydrargyri ... gr. 1 Pulv. Scillæ ... gr. 1-1/2 Pulv. Digitalis ... gr. 1			
,, Bone Medulla, gr. 5, (Capsule), boxes of 50	1 or more	—	—
,, Borax (Sodium Borate), gr. 5	1 to 4 or more	25	100
,, Boric Acid, gr. 5	1 to 3	—	100
,, Bromides Compound (*see* Sodium Bromide Compound)			
,, Butyl-Chloral Hydrate and Gelsemine	1	—	100
℞ Butyl-Chloral Hydratis... gr. 3 Gelseminæ Hydrochloridi ... gr. 1/200			

C

,, Cachets—			
,, ,, Antipyrine, gr. 5, boxes of 6	1 to 2	—	—
,, ,, Quinine Sulphate, gr. 5, boxes of 6	1 to 2	—	—
,, Caffeine, Citrated, gr. 2 ...	1 or more	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*	DOSE	Issued in oval bots. of	Issued in bots. of
'TABLOID' BRAND—			
,, Caffeine Compound (*see* Antipyrine Compound, *page* 185)			
,, Calcium Carbonate Compound ℞ Calcii Carb. Præcip. gr. 3-1/2 Mag. Carb. Pond. gr. 2-1/2 Bismuthi Subcarb. gr. 2	1 to 4 before meals, or 1 occasionally	25	100
,, Calcium Iodo-ricinoleate, gr. 3, (Capsule), boxes of 50 ...	1 to 3	—	—
,, Calcium Lactate, gr. 5 ...	1 to 3	25	100
,, Calcium Sulphide, gr. 1/10	1 to 4 or more	100	—
,, ,, ,, gr. 1/4 ...	1 to 4	—	100
,, ,, ,, gr. 1/2 ...	1 to 2	—	100
,, ,, ,, gr. 1 ...	1	—	100
,, Calomel (Hydrarg. Chlor. Mit.), gr. 1/10, gr. 1/6, gr. 1/4 and gr. 1/2	1 repeated	100	—
,, ,, gr. 1	1 to 5	—	100
,, ,, gr. 2	1 to 3	—	100
,, ,, gr. 3	1 to 2	—	100
,, ,, gr. 5 ... ... Prepared with pure sublimed English Mercurous Chloride.	1	—	100
,, Calomel and Creosote ... ℞ Hydrargyri Chloridi Mitis ... ... gr. 1/6 Creosoti ... ... min. 1	1 to 5	—	100
,, Calomel and Jalap ... ... ℞ Hydrargyri Chloridi Mitis ... ... gr. 1 Pulv. Jalapæ ... gr. 2	1 to 4	—	100
,, Calomel and Piperine, of each gr. 1/2	1 repeated	—	100
,, Calomel, gr. 1/4, and Sodium Bicarbonate, gr. 1	1 or more	25	100
,, Calomel, gr. 1/2, and Sodium Bicarbonate, gr. 2-1/2 ...	1 or more	25	100
,, Calomel, gr. 1, and Sodium Bicarbonate, gr. 5	1 or more	25	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Camphorated Opium, each containing the solid ingredients of Camphorated Tincture of Opium (Paregoric), min. 2	1 frequently	100	—
,, Camphorated Opium, each containing the solid ingredients of Camphorated Tincture of Opium (Paregoric), min. 5	1 frequently	48	100
,, Camphorated Opium, each containing the solid ingredients of Camphorated Tincture of Opium (Paregoric), min. 15	1 to 4	36	100
,, Cane Sugar, gr. 3		—	100
,, Cannabis Indica. (*See* Indian Cannabis Extract)			
,, Capsicum, each containing the solid ingredients of Tincture of Capsicum, min. 1 ...	1 frequently	100	—
,, Capsicum, each containing the solid ingredients of Tincture of Capsicum, min. 5 ...	1 to 3 or more	—	100
,, Capsules— (*See* 'Aol,' *page* 185 ; Bone Medulla, *page* 188 ; Calcium Iodo-ricinoleate, *page* 189 ; Carbolic Acid, *below* ; Castor Oil, *page* 191 ; Juniper Oil, *page* 201 ; Phenol and Menthol Compound, *page* 208 ; Sandal Wood Oil, *page* 212 ; Terebene, *page* 215 ; Turpentine Oil, Rectified, *page* 217.)			
,, Carbolic Acid (Phenol), gr. 1/4 (*for the throat*)	1 as required	25	100
,, Carbolic Acid (Phenol), gr. 1/2 (*for the throat*)	1 as required	25	100
,, Carbolic Acid (Phenol), gr. 1, (Capsule), boxes of 24 ...	1 to 3	—	—

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid'— — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Carbolic Acid, gr. 1/2, with Slippery Elm, bottles of 25...	1 occasionally	—	100
,, Carlsbad Salt, *Effervescent*, Artificial, N.F., tubes of 25	1 or more as desired	—	—
,, Cascara Sagrada (Dry Extract), gr. 1	1 or more	25	100
,, ,, ,, ,, gr. 2	1 to 4	25	100
,, ,, ,, ,, gr. 3	1 to 3	25	100
,, ,, ,, ,, gr. 4	1 to 2	25	100
gr. 5	1 as required	25	100
The uniform reliability of 'Tabloid' Cascara Sagrada has established for it the premier position in the estimation of physicians throughout the world.			
,, Cascara Compound	1 to 4	25	100
℞ Ext. Cascaræ Sagradæ gr. 1 Ext. Euonymi ... gr. 1/2 Iridini ... ... gr. 1/2 Ext. Nucis Vomicæ gr. 1/16 Ext. Hyoscyami Viridis... gr. 1/3			
,, Cascara and Gentian Compound	1 to 3	25	100
℞ Ext. Cascaræ Sagradæ gr. 2 Ext. Nucis Vomicæ gr. 1/5 Ext. Belladonnæ ... gr. 1/10 Ext. Gentianæ ... gr. 1 Capsicini ... ... gr. 1/10			
,, Castor Oil, min. 5, (Capsule), boxes of 50	1 or more	—	—
,, Cathartic Compound... ...	1 to 2	25	100
℞ Ext. Colocynthidis Comp. gr. 1-1/3 Hydrargyri Chloridi Mitis gr. 1 Ext. Jalapæ ... gr. 1 Pulv. Cambogiæ ... gr. 1/4			
A cathartic compound of exceptional purity of ingredients and of proved reliability.			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products—*continued*		Issued in	
'TABLOID' BRAND—	DOSE	oval bots. of	bots. of
,, Cerebrin, gr. 5	1 or more	—	100
,, Cerium Oxalate, gr. 5 ...	1 to 2	—	100
,, Charcoal (Pure Willow), gr. 5, bottles of 40	1 or more as required	—	100
,, Chloralformamide (Chloralamide), gr. 5	3 to 6	—	100
,, Chloral, Hydrated, gr. 5 ...		—	100
,, ,, ,, gr. 10 ...		—	100
,, Chocolate, gr. 60, boxes of 12		—	—
,, Cinchona, each containing the solid ingredients of Tincture of Cinchona, min. 30	1 to 2	36	100
,, Citric Acid, gr. 5	1 to 4	—	100
Cocaine Hydrochloride (*see* 'Soloid' Brand products)			
,, Cocaine Co. with Potassium Chlorate and Borax (*see* Voice, *page* 218)			
,, Cocoa, gr. 60, boxes of 12 ...		—	—
,, Codeine, gr. 1/4	1 to 4 or more	25	100
,, ,, gr. 1/2	1 to 4	25	100
,, Codeine and Benzoic Acid Compound	1 as required	25	100
℞ Cocainæ Hydrochloridi ... gr. 1/40 Codeinæ ... ... gr. 1/10 Acidi Benzoici ... gr. 1/2 Mentholis ... ... gr. 1/10 Pulv. Ipecacuanhæ gr. 1/10 Ol. Menthæ Piperitæ min. 1/16 Gummi Rubri ... *q.s.* Highly efficient in the irritating cough of pharyngitis, etc.			
,, Codeine and Benzoic Acid Compound, without Cocaine Differs from foregoing only in that no Cocaine is added.	1 as required	25	100
,, Codeine and Nux Vomica ...	1 to 2	25	—
℞ Codeinæ Phosphatis gr. 1 Ext. Nucis Vomicæ gr. 1/4			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, 'Coffee-Mint'	1 to 4 or more	25	100
℞ Sodii Bicarbonatis... gr. 3 Ammonii Bicarbonatis gr. 1/16 Ext. Coffeæ ... gr. 1/2 Cerii Oxalatis ... gr. 1/4 Ol. Menthæ Piperitæ *q.s.* Diffusible stimulant, especially valuable in flatulence, in the nausea associated with liver disorder, and in the vomiting of pregnancy.			
,, Colchicine Salicylate, gr. 1/32	1 to 2	—	100
,, Colocynth and Hyoscyamus, N.F. Pill	1 to 2	—	100
Each product equals one of the N.F. pills.			
,, Colocynth Compound, N.F.	1 to 2	—	100
Each product equals one of the N.F. pills.			
,, Corrosive Sublimate (*see* Hydrarg. Perchlor., *page* 198)			
,, Cotarnine Hydrochloride, gr. 3/4, bottles of 25 ...	1 to 3	—	—
,, Cubeb and Belladonna, *Effervescent*	1 as required	—	100
℞ Pulv. Cubebæ ... gr. 1/2 Ext. Belladonnæ ... gr. 1/20			
,, Cubeb Compound	1 as required	25	100
℞ Oleo-resinæ Cubebæ gr. 1/4 Ammonii Chloridi... gr. 1/2 Glycyrrhizini ... gr. 1/4			
D			
,, Dentifrice		—	100
,, Didymin (Testicular Substance), gr. 5	1 increased to 4	—	100
,, Digitalin (Amorphous), gr. 1/100	1 to 3	50	—
,, Digitalis, each containing the solid ingredients of Tincture of Digitalis, min. 1 ...	1 frequently	100	—

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Digitalis, each containing the solid ingredients of Tincture of Digitalis, min. 5 ...	1	48	100
,, Donovan Solution (*see* Arsenous Iodide and Mercuric Iodide)			
,, Dover Powder (*see* Ipecac and Opium Powder)			
E			
,, Easton Syrup (*see* Phosphates of Iron, Quinine and Strychnine)			
,, Effervescent Products, *See* Carlsbad Salt, *page* 191; Cubeb and Belladonna, *page* 193; Kissingen Salt, *page* 201; Lithium Citrate, *page* 202; Lithium Citrate and Urotropine, *page* 202; Magnesium Citrate, *page* 203; Magnesium Sulphate, *page* 203; Magnesium Sulphate Compound, *page* 203; Piperazine, *page* 208; Quinine Bisulphate and Potassium Citrate, *page* 210; Seltzer Salt, *page* 213; Sodium Phosphate, *page* 214; Sodium Sulphate, *page* 214; Sodium Sulphate Compound, *page* 214; Three Bromides, *page* 216; Vichy Salts, *page* 217.			
,, Elaterin, gr. 1/40	1 to 4	25	—
,, Ergot Extract (Ergotin), gr. 1	1 to 4 or more	—	100
,, ,, ,, ,, gr. 2	1 to 4	—	100
,, ,, ,, ,, gr. 3	1 to 3	—	100
,, Ergotin and Strychnine ... ℞ Ext. Ergotæ (Ergotini) gr. 3 Strychninæ Sulphatis gr. 1/30	1 to 2	—	100
,, Erythrol Tetranitrate (Tetranitrin), gr. 1/4, tubes of 25...	1 to 4	—	—
,, Erythrol Tetranitrate (Tetranitrin), gr. 1/2	1 to 2	25	—

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

Tabloid' Brand Products—*continued*

TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Erythrol Tetranitrate (Tetranitrin), gr. 1	1	12	—
,, Euonymus Extract (Euonymin), gr. 1/8	1 to 4 or more	50	—
,, Euonymus Extract (Euonymin) gr. 1/2	1 to 4	50	—
,, Exalgin, gr. 2	1 to 2	—	100
F			
,, Fellis Bovis Purificati (*see* Ox Bile, *page* 206)			
,, Fellis Porcini Purificati (*see* Pig Bile, *page* 208)			
,, Ferric Chloride, gr. 1-1/4 ... Each represents the amount of Ferric Chloride contained in min. 10 of Tinct. Ferri Chloridi. This product contains a small quantity of ammonium chloride as a vehicle.	1	—	100
,, Ferric Chloride and Arsenic... ℞ Ferri Chloridi ... gr. 1-1/4 (= Tinct. Ferri Chloridi, min. 10) Arseni Trioxidi ... gr. 1/30	1	—	100
,, Ferri Reducti (*see* Reduced Iron, *page* 211)			
,, Ferri Sulphatis Exsiccati (*see* Iron Sulphate, dried, *page* 200)			
,, Ferruginous (*see* Blaud Pill and combinations, *page* 187)			
,, Ferrum (*see* Iron, *page* 200)			
'Forced March' (*see* Kola Compound, *page* 201)			
G			
,, Ginger, each containing the solid ingredients of Essence of Ginger (1 in 2), min. 5 ...	1 to 4	48	100

Pharmaceutical preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Ginger, each containing the solid ingredients of Essence of Ginger (1 in 2), min. 10	1 to 2	—	100
,, Glycerophosphates Compound, dr. 1/2	1 to 8	25	100
Each presents the amount of calcium, sodium, potassium, magnesium and iron glycerophosphates, with strychnine glycerophosphate, gr. 1/800, pepsin, diastase and kola, contained in 1/2 fluidrachm of Syrup of Glycerophosphates.			
Presents phosphorus in the organic condition in which it is found in the system.			
,, Glyceryl Trinitrate (*see* Trinitrin, *page* 217)			
,, Granulated Opium (*see* Opium, Granulated, *page* 206)			
,, Green Dye, Aniline, gr. 30, tubes of 12		—	—
,, Gregory Powder (*see* Rhubarb Compound Powder, *page* 212)			
,, Grey Powder (Hydrarg. cum Cretâ)			
,, ,, ,, gr. 1/4 ...	1 repeated	100	—
,, ,, ,, gr. 1/3 ...	1 ,,	100	—
,, ,, ,, gr. 1/2 ...	1 ,,	100	—
,, ,, ,, gr. 1	1 to 5	100	—
,, ,, ,, gr. 2	1 to 3	—	100
,, ,, ,, gr. 3	1 to 2	—	100
,, ,, ,, gr. 5	1	—	100
The 'Tabloid' products contain 38 per cent. of pure metallic mercury.			
,, Grey Powder and Dover Powder, of each gr. 1/2 ...	1 to 5 or more	—	100
,, Grey Powder and Dover Powder, of each gr. 1 ...	1 to 5	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Grey Powder and Opium ...	1 to 5	—	100
℞ Hydrarg. cum Cretâ gr. 1 Pulveris Opii ... gr. 1/6			
,, Grey Powder, Opium and Quinine	1 to 3	—	100
℞ Extracti Opii ... gr. 1/6 Hydrargyri cum Cretâ gr. 1-1/2 Quininæ Sulphatis gr. 1-1/2			
,, Grey Powder, gr. 1/2, and Sodium Bicarbonate, gr. 2-1/2	1 repeated	—	100
,, Grey Powder, gr. 1, and Sodium Bicarbonate, gr. 5	1 to 5	25	100
,, Guaiac, gr. 5	1 to 3	25	100
,, Guaiac and Quinine Compound	1 to 4	—	100
℞ Guaiaci ... ... gr. 2 Sulphuris ... ... gr. 2 Quininæ Salicylatis gr. 1/2			
,, Guaiac and Sulphur	1 to 4	25	100
℞ Guaiaci ... ... gr. 3 Sulphuris Præcipitati gr. 3			
,, Guaiacol Camphorate, gr. 5	1 to 2 increased	25	100
,, Guaiacol Carbonate, gr. 5 ...	1 to 2	25	100
H			
,, Hæmoglobin, gr. 5	1 or more	—	100
,, Heroin Hydrochloride, gr. 1/25	1 to 4	25	100
,, ,, ,, gr. 1/10	1	—	100
,, Hydrarg. et Colocynth et Hyoscy (*see* Blue Pill, Colocynth and Hyoscyamus, *page* 189).			
,, Hydrargyri Chloridi Mitis and combinations (*see* Calomel and combinations, *page* 189)			
,, Hydrarg. c. Cretâ and combinations (*see* Grey Powder and combinations)			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Hydrarg. Iodid. Flav., gr. 1/8	1 to 4	25	100
,, Hydrarg. Iodid. Rubr., gr. 1/20	1	50	—
,, ,, ,, ,, gr. 1/16	1	50	—
,, Hydrarg. Iodid. Virid., gr. 1/8	1 to 4 increased	50	—
,, Hydrargyri Perchloridi (Mercuric Chloride), gr. 1/100	1 to 4 or more	100	—
,, Hydrargyri Perchloridi (Mercuric Chloride), gr. 1/16 ...	1	100	—
,, Hydrarg. Perchloridi, gr. 1/32, et Potassii Iodidi, gr. 2-1/2	1 to 2	—	100
,, Hydrarg. Perchloridi, gr. 1/16, et Potass. Iodid., gr. 5 ...	1	—	100
,, Hydrastine Compound ...	1 to 3 repeated	25	100
℞ Cannabinæ Tannatis gr. 1/2 Hydrastinæ Hydrochloridi gr. 1/4 Ext. Ergotæ (Ergotini) gr. 1/2			
,, Hydrastine Compound and Cotarnine Hydrochloride ...	1 to 3 repeated	25	100
℞ Cannabinæ Tannatis gr. 1/2 Cotarninæ Hydrochloridi gr. 1/4 Hydrastinæ Hydrochloridi gr. 1/4 Ext. Ergotæ (Ergotini) gr. 1/2			
,, Hydrastine Hydrochloride, gr. 1/4	1 to 4 repeated	—	100
,, Hydrated Chloral (*see* Chloral, Hydrated, *page* 192)			
,, Hyoscyamus, each containing the solid ingredients of Tincture of Hyoscyamus, min. 10	1 to 4 or more	36	100
,, Hypodermic Products (*see pages* 157-161)			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*	DOSE	Issued in oval bots. of	Issued in bots. of
'TABLOID' BRAND—			
,, Hypophosphites Compound, gr. 1-1/2 ... ... Each contains Calcium, Potassium, Sodium, Manganese, Iron and Quinine Hypophosphites, with gr. 1/128 of Strychnine Hypophosphite.	1 to 2	25	100
,, Hypophosphites Compound, gr. 3 ... ... Containing gr. 1/64 of Strychnine Hypophosphite.	1	25	100
,, Hypophosphites Compound and Creosote ... ... Each contains: Creosote, min. 1, and gr. 3 of the combined Hypophosphites of Calcium, Sodium, Potassium, Manganese, Iron and Quinine, with gr. 1/64 of Strychnine Hypophosphite.	1	—	100
I			
,, Ichthyol, gr. 2-1/2	1 to 4	25	100
,, Indian Cannabis Extract, each containing Extract equivalent to Tincture of Indian Cannabis, min. 5 ...	1 to 3	48	100
,, Ipecac Powder, gr. 1/10 ...	1 frequently	100	—
,, ,, ,, gr. 5 ...	1 every hour	—	100
,, Ipecac deprived of its Emetic Principles, gr. 5 ...	1 to 4 or more	—	100
,, Ipecac with Antimony and Potassium Tartrate, of each gr. 1/100	1 frequently	—	100
,, Ipecac Extract, each containing the solid ingredients of Wine of Ipecac, min. 5 ...	1 to 3 *(expectorant)*	50	100
,, Ipecac and Opium Powder (Dover Powder), gr. 1/4 ... Each contains Opium and Ipecac, of each gr. 1/40	1 frequently	100	—
,, Ipecac with Opium Powder (Dover Powder), gr. 5 ... Each contains Opium and Ipecac, of each gr. 1/2	1 to 3	25	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Ipecac with Squill	1 to 2	—	100
Each contains approximately: Ipecac and Opium, of each gr. 1/5, Powdered Squill and Powdered Ammoniacum, of each gr. 2/3			
,, Iridin Compound	1 to 2	25	100
℞ Iridini ... ... gr. 2 Ext. Hyoscyami Viridis gr. 1/2 Pil. Rhei Comp. ... gr. 1-1/2			
,, Iron and Arsenic Compound	1 to 3	—	100
℞ Ferri Hypophosphitis gr. 2 Quininæ Bisulphatis gr. 1 Arseni Trioxidi ... gr. 1/50 Strychninæ Sulphatis gr. 1/50 Tonic, stimulant, hæmatinic and alterative.			
,, Iron, Arsenic and Digitalin ...	1 to 3	25	100
℞ Ferri Phosphatis Solubilis gr. 3 Arseni Trioxidi ... gr. 1/100 Digitalini (Amorph.) gr. 1/100			
,, Iron Carbonate, Saccharated, gr. 5...	1 to 6	—	100
,, Iron Glycerophosphate, gr. 3	1 to 2	25	100
,, Iron Phosphate with Quinine and Strychnine (*see* Phosphates of Iron, Quinine and Strychnine, *page* 208) ...			
,, Iron Pill (*see* Blaud, *page* 187)			
,, Iron, Quinine and Strychnine Phosphates (*see* Phosphates of Iron, Quinine and Strychnine, *page* 208)			
,, Iron and Quinine Citrate, gr. 3	1 to 3	25	100
,, Iron, Reduced (*see* Reduced Iron)			
,, Iron and Strychnine Phosphates	1	25	100
℞ Ferri Phosphatis Solubilis gr. 1 Strychninæ Phosphatis gr. 1/32			
,, Iron Sulphate, Dried, gr. 3...	1	—	100
,, Iron Valerate, gr. 1	1 or more	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
J			
,, Jalap, gr. 5	1 to 4	—	100
,, Juniper Oil, min. 3, (Capsule), boxes of 50	1	—	—
K			
,, Kino Compound Powder, N.F., gr. 5 ... ... Each contains: Kino, gr. 3-3/4; Opium, gr. 1/4; and Cinnamon, gr. 1.	1 to 4	—	100
,, Kissingen Salt. *Effervescent*, Artificial, N.F., tubes of 25	1 or more as required	—	—
,, Kola Compound *(formerly known as* 'Tabloid' 'Forced March'*)*, bottles of 25 ... Contains the combined active principles of Kola Nut and Coca Leaves.	1 every hour, if required	—	100
,, Krameria and Cocaine ... ℞ Cocainæ Hydrochloridi gr. 1/20 Ext. Krameriæ ... gr. 1	1 occasionally	25	100
L			
,, Laudanum (*see* Opium, Granulated, *page* 206)			
,, Laxative Vegetable ... ... ℞ Ext. Colocynthidis Comp. ... ... gr. 1 Ext. Jalapæ ... gr. 1/2 Resinæ Podophylli gr. 1/4 Leptandrini... ... gr. 1/2 Ext. Hyoscyami Viridis ... gr. 1/4 Ext. Taraxaci ... gr. 1/4 Ol. Menthæ Piperitæ *q.s.* A purely vegetable laxative and cholagogue prepared with drugs of exceptional purity.	1 to 3	25	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Lead with Opium, N.F. Pill Each product equals one of the N.F. Pills.	1	—	100
,, Lithium Benzoate Compound ℞ Lithii Benzoatis ... gr. 3 Sulphuris Præcipitati gr. 2 Quininæ Salicylatis gr. 1/3	1 to 4 or more	—	100
,, Lithium Carbonate, gr. 2 ...	1 to 3	—	100
,, Lithium Citrate, gr. 5, *Effervescent*, bottles of 25 ...	1 to 2	—	100
,, Lithium Citrate, *Effervescent*, gr. 60, tubes of 25 ... ... Each contains about gr. 3 of Lithium Citrate.	1 to 2	—	—
,, Lithium Citrate and Sodium Sulphate, *Effervescent*, tubes of 25... ... ... ℞ Lithii Citratis ... gr. 5 Sodii Sulphatis ... gr. 30	1 to 2	—	—
,, Lithium Citrate and Urotropine, *Effervescent*, tubes of 25 ... ... ℞ Lithii Citratis ... gr. 5 Urotropinæ ... gr. 3 Salis Effervescentis *q.s.*	1 or more	—	—
Livingstone Rouser (*see* Quinine and Rhubarb Compound, *page* 210)			
,, 'Lodal' *(Trade Mark)* (6 : 7-Dimethoxy-2-methyl-3 : 4-dihydro*iso*quinolinium Chloride), gr. 1	1	25	100
M			
,, Magenta Dye, Aniline, gr. 30 tubes of 12		—	—
,, Magnesium Carbonate Compound ... ... ℞ Magnesii Carbonatis gr. 3 Potass. Bicarbonatis gr. 3 Sodii Bicarbonatis... gr. 3	1 to 4	25	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid'— — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Magnesium Citrate (*True*), Effervescent, gr. 60, tubes of 25	1 to 3	—	—
,, Magnesium Sulphate, Effervescent, gr. 60, tubes of 25 Each represents gr. 30 of Magnesium Sulphate.	1 to 4	—	—
,, Magnesium Sulphate Compound, Effervescent, tubes of 25 ... ... ℞ Magnesii Sulphatis gr. 15 Sodii Sulphatis ... gr. 15 Magnesii Carbonatis gr. 5 Liq. Zingiberis, N.F. min. 3-1/2	1 to 4	—	—
,, Magnesium Sulphite, gr. 5 ...	1 frequently	—	100
,, 'Mamos' *(Trade Mark) (formerly known as* 'Tabloid' Mammary Gland*)*, gr. 5 ...	1 increased	—	100
,, Manganese Citrate *(soluble)*, gr. 3...	1 to 3	25	—
,, Manganese Citrate *(soluble)*, gr. 5...	1 to 2	25	—
,, Manganese Dioxide, gr. 2 ...	1 to 5	25	100
,, Manganese and Iron Citrate *(soluble)*, gr. 3	1 to 3	25	100
,, Manganese and Iron Citrate *(soluble)*, gr. 5	1 to 2	25	100
,, Manganese and Iron Citrate with Quinine *(soluble)*, gr. 3 Each contains Quinine, approximately gr. 1/2.	1 to 3	25	—
,, Manganese and Iron Citrate with Quinine *(soluble)*, gr. 5 Each contains Quinine, gr. 3/4.	1 to 2	25	—
,, Manganese and Iron Citrate with Strychnine *(soluble)*, gr. 1 ... ... Each contains Strychnine, gr. 1/100.	1 to 3	25	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Manganese and Iron Phosphate *(soluble)*, gr. 3 ...	1 to 3	25	100
,, Manganese and Iron Phosphate *(soluble)*, gr. 5 ...	1 to 2	25	100
,, Medulla (*see* Bone Medulla, *page* 188)			
,, Menthol, gr. 1/4, bottles of 40	1 repeated	—	100
,, Menthol Compound	1 to 4	—	100
R Mentholis ... ... gr. 1/2 Sodii Bicarbonatis... gr. 3 Saccharini ... ... gr. 1/6 Prepared with Menthol of exceptional quality.			
,, Mercurous Chloride (*see* Calomel, *page* 189)			
,, Mercuric Chloride (*see* Hydrarg. Perchlor., *page* 198)			
,, Mercuric Potassium Iodide, *(formerly known as* Iodic-Hydrarg.*)*, gr. 1/6	1	—	100
,, Mercury Green Iodide (*see* Hydrarg. Iod. Vir., *page* 198)			
,, Mercury Perchloride (*see* Hydrarg. Perchlor., *page* 198)			
,, Mercury Red Iodide (*see* Hydrarg. Iod. Rubr., *page* 198)			
,, Mercury Subchloride (*see* Calomel, *page* 189)			
,, Mercury with Chalk, and combinations (*see* Grey Powder and combinations, *page* 197)			
,, Mercury Yellow Iodide (*see* Hydrarg. Iod. Flav.)			
,, Methylene Blue, gr. 2 ...	1 to 2	—	100
,, Milk Sugar, gr. 3		—	100
,, Mineral Water Salts. *Effervescent, Artificial* (*see* Carlsbad, Kissingen, Seltzer and Vichy)			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: 

Tabloid' Brand Products—*continued*

TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Mistura Alba	1 to 8	—	100
℞ Magnesii Carb. Pond. gr. 2-1/2 Magnesii Sulphatis gr. 15 Ol. Menthæ Pip. min. 1/32 Conveniently presents a most efficient saline combination.			
,, Morphine and Emetine, bottles of 50	1	—	—
℞ Morphinæ Sulphatis gr. 1/40 Emetinæ Hydrobrom. gr. 1/80			
,, Morphine, Strychnine and Belladonna	1 as required	25	100
℞ Morphinæ Sulphatis gr. 1/12 Strychninæ Sulphatis gr. 1/60 Ext. Belladonnæ ... gr. 1/20			
,, Morphine Sulphate, gr. 1/20	1 to 4 or more	50	—
,, ,, ,, gr. 1/8	1 to 4	50	—
,, ,, ,, gr. 1/4	1 to 2	50	—
,, Mucin Compound	2 or more	25	100
℞ Mucini ... ... gr. 5 Sodii Bicarbonatis gr. 5			
N			
,, Nitroglycerin (*see* Trinitrin, *page* 217)			
,, Nuclein, gr. 1	1 or more	—	100
,, Nux Vomica, each containing the solid ingredients of Tincture of Nux Vomica, min. 1	1 frequently	100	—
,, Nux Vomica, each containing the solid ingredients of Tincture of Nux Vomica, min. 5	1 to 3	48	100
,, Nux Vomica, each containing the solid ingredients of Tincture of Nux Vomica, min. 10	1	36	100
,, Nux Vomica Compound ...	1 to 3	25	100
℞ Ext. Nucis Vomicæ, Aloini, Ferri Sulphatis, Pulv. Myrrhæ, Pulv. Saponis āā gr. 1/2 Stomachic and tonic aperient, of special value in chronic constipation.			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
O			
,, Ophthalmic Products *(see pages 164-165)*			
,, Opium, gr. ½	1 to 4	—	100
,, ,, gr. 1	1 to 2	—	100
,, Opium, Granulated, each containing the solid ingredients of Tincture of Opium (Laudanum), min. 2 ...	1 to 5	48	100
,, Opium, Granulated, each containing the solid ingredients of Tincture of Opium (Laudanum), min. 5 ...	1 to 3	48	100
,, Opium, Granulated, each containing the solid ingredients of Tincture of Opium (Laudanum), min. 10 ...	1	36	100
,, 'Orsudan' *(Trade Mark)* (Sodium 3-Methyl-4-acetyl-aminophenylarsonate), gr. 1	1 to 10 hypodermically	—	100
,, 'Orsudan' *(Trade Mark)* (Sodium 3-Methyl-4-acetyl-aminophenylarsonate), gr. 5, bottles of 25	1 to 2 hypodermically	—	—
,, Ovarian Substance (*see* 'Varium')			
,, Ox Bile (Purified), gr. 4 ...	1 to 4	—	100
P			
,, Pancreatin (*see* 'Pepana,' *page* 207)			
,, Papain, gr. 2	1 to 4	25	100
,, Paregoric (*see* Camphorated Opium, *page* 190)			
,, Pastilles *(see pages 166-167)*			
,, Pelletierine Tannate, gr. 2 ...	1 to 4	25	—

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, 'Pepana' *(Trade Mark)* ... (Gastro-enteric digestive) ℞ Pepsini ... ... gr. 1; Pancreatini ... ... gr. 1; Calcii Lactophosphatis gr. 1. Scientifically prepared for the treatment of dyspeptic conditions affecting both stomach and intestines.	1 to 3	25	100
,, Pepsin, Bismuth and Charcoal ℞ Pepsini ... ... gr. 2; Bismuthi Subcarbonatis gr. 2; Carbonis Ligni ... gr. 2. Digestive, sedative and absorbent, of special service in flatulent dyspepsia.	1 to 3	25	100
,, Pepsin and Strychnine ... ℞ Pepsini ... ... gr. 2; Strychninæ Sulphatis gr. 1/100	1 to 3	25	100
,, Pepsin, Bismuth and Strychnine ... ... ℞ Pepsini ... ... gr. 2; Bismuthi Subcarbonatis ... ... gr. 3; Strychninæ Sulphatis gr. 1/100	1 to 3	25	100
,, Pepsin, Saccharated, gr. 5 ...	1 to 4 or more	—	100
,, Phenacetin, gr. 5	1 to 2	25	100
,, Phenacetin Compound ... ℞ Phenacetini ... gr. 4; Caffeinæ ... ... gr. 1. Conspicuously safe and effective in the treatment of headache and neuralgia.	1 to 3	25	100
,, Phenacetin and Quinine Compound ... ... ℞ Phenacetini ... gr. 3; Quininæ Hydrobromidi ... ... gr. 1/2; Caffeinæ ... ... gr. 2/3	1 to 3	—	100
,, Phenacetin and Salol ... ℞ Phenacetini, Salol ... āā gr. 2½	1 to 2	—	100
,, Phenazone (*see* Antipyrine)			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Phenol and Menthol Compound, (Capsule), boxes of 25 ℞ Phenolis ... ... gr. 1 4 Mentholis ... ... gr. 1/2 Ol. Cajuputi ... min. 1	1 as required	—	—
,, Phenyl Salicylate (*see* Salol, *page* 212).			
,, Phosphates of Iron, Quinine and Strychnine, dr. 1/2 ...	1 to 2	25	100
,, Phosphates of Iron, Quinine and Strychnine, dr. 1 ... Present, in a soluble condition, the amount of iron (ferric state), quinine and strychnine contained in corresponding doses of Easton Syrup.	1	25	100
,, Photographic *(see pages 168-171)*			
,, Pig Bile (Purified), gr. 4, *keratin-coated*	1 to 4	—	100
,, Pilocarpine Nitrate, gr. 1/10	1 to 5	25	—
,, ,, ,, gr. 1/4 . .	1 to 2	25	—
,, Piperazine, gr. 5, bottles of 25	1 to 2	—	—
,, Piperazine, gr. 5, *Effervescent*, tubes of 12	1 to 2	—	—
,, Pituitary Gland, gr. 2 ...	1 to 3	—	100
,, Plummer Pill (*see* Antimony Compound Pill)			
,, Podophyllin, gr. 1/4	1 to 4	100	—
,, Podophyllin and Euonymin ... ℞ Resinæ Podophylli gr. 1/4 Ext. Euonymi ... gr. 1	1 to 2	—	100
,, Podophyllin Compound ... ℞ Resinæ Podophylli gr. 1/6 Pil. Rhei Comp. ... gr. 2-1/2 Ext. Hyoscyami Viridis gr. 1-1/4	1 to 3	—	100
,, Potassium Bicarbonate, gr. 5	1 to 6	40	100
,, Potassium Bromide, gr. 5 ...	1 to 6	—	100
,, ,, ,, gr. 10 ...	1 to 3	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Potassium Chlorate, gr. 5 ...	1 as required	40	100
In graven white-metal boxes, each containing 40 or 100 Stimulating, expectorant, superior to gargles and sprays.			
,, Potassium Chlorate and Borax	1 as required	40	100
In graven white-metal boxes, each containing 40 or 100 Presents its constituents in the most efficient and convenient manner for relieving hoarseness, etc.			
,, Potassium Chlorate, Borax and Cocaine Co. (*see* Voice, *page* 218)			
,, Potassium Iodide, gr. 1 ...	1 frequently (*expectorant*)	—	100
,, ,, ,, gr. 3 ...	1 to 6	—	100
,, ,, ,, gr. 5 ...	1 to 4	—	100
,, Potassium Nitrate (Sal Prunella), gr. 5...	1 to 4	—	100
,, Potassium Permanganate, gr. 1	1 to 3	—	100
,, ,, ,, gr. 2	1	—	100
,, Prostate Gland, gr. 2-1/2 ...	1 to 2	—	100

Q

,, Quinine, Ammoniated (*see* Ammoniated Quinine)			
,, Quinine, Arsenic and Strychnine	1	—	100
℞ Quininæ Bisulphatis gr. 1 Arseni Trioxidi ... gr. 1/20 Strychninæ ... ... gr. 1/30			
,, Quinine and Camphor ...	1 every hour	25	100
℞ Quininæ Bisulphatis gr. 1 Camphoræ ... ... gr. 1/5			
,, Quinine, Belladonna and Camphor	1 to 4	25	100
℞ Quininæ Sulphatis gr. 1/4 Ext. Belladonnæ ... gr. 1/8 Camphoræ ... ... gr. 1/4			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Quinine and Rhubarb Compound (*well known for many years as* 'Tabloid' Livingstone Rouser)	1 to 3	25	100
℞ Pulv. Jalapæ ... gr. 1-1/2 Hydrargyri Chloridi Mitis gr. 1 Pulv. Rhei ... ... gr. 1-1/2 Quininæ Bisulphatis gr. 1			
,, Quinine and Strychnine ...	1 to 3	25	100
℞ Quininæ Bisulphatis gr. 1 Strychninæ Sulphatis gr. 1/60			
,, Quinine Bihydrochloride (Acid Quinine Hydrochloride), gr. 5	1 to 2	25	100
,, Quinine Bihydrochloride (Acid Quinine Hydrochloride), gr. 10	1	25	100
,, Quinine Bisulphate, gr. 1/2 ...	1 or more	50	100
,, ,, ,, gr. 1 ...	1 or more	36	100
,, ,, ,, gr. 2 ...	1 to 5	25	100
,, ,, ,, gr. 3 ...	1 to 3	25	100
,, ,, ,, gr. 4 ...	1 to 2	25	100
,, ,, ,, gr. 5 ...	1 to 2	25	100
,, ,, ,, gr. 10 ...	1	25	100
Proved by the experience of medical officers to retain its therapeutic activity under the most adverse climatic conditions.			
,, Quinine Bisulphate and Potassium Citrate, *Effervescent*, tubes of 25	1 to 2, repeated as necessary	—	—
℞ Quininæ Bisulphatis gr. 1 Potassii Citratis ... gr. 15			
,, Quinine Compound	1 every hour	25	100
℞ Acetanilidi (Antifebrini) ... ... gr. 1-1/5 Cinchonæ Alkaloidorum gr. 1 Camphoræ Monobromatæ gr. 1/5 Pulv. Ipecacuanhæ gr. 1/8 Ext. Cascaræ Sagradæ gr. 1/4			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Quinine Hydrobromide, gr. 1	1 or more	25	100
,, ,, ,, gr. 2	1 to 5	25	100
,, ,, ,, gr. 3	1 to 3	25	100
,, ,, ,, gr. 4	1 to 2	25	100
,, ,, ,, gr. 5	1 to 2	25	100
,, Quinine Hydrochloride, gr. 1	1 or more	25	100
,, ,, ,, gr. 2	1 to 5	25	100
,, ,, ,, gr. 3	1 to 3	25	100
,, ,, ,, gr. 4	1 to 2	25	100
,, ,, ,, gr. 5	1 to 2	25	100
,, Quinine Salicylate *(Physiologically Pure)*, gr. 1 ...	1 to 6	25	100
,, Quinine Salicylate *(Physiologically Pure)*, gr. 3 ...	1 to 2	25	100
,, Quinine Sulphate, gr. 1, gr. 2, gr. 3, gr. 4 and gr. 5 are supplied in packages of the same size as Quinine Bisulphate.			
,, Quinine Valerate, gr. 2 ...	1 to 2	—	100
R			
,, Red Gum	1 occasionally	25	100
,, Reduced Iron, gr. 2	1 to 3	—	100
,, Reduced Iron Compound ...	1 to 2	25	100
℞ Ferri Reducti ... gr. 2 Ext. Hyoscyami ... gr. 1 Ext. Nucis Vomicæ gr. 1/2 Olei Cari ... ... min. 1/4			
,, Reduced Iron and Rhubarb Compound	1 to 2	25	100
℞ Ferri Reducti ... gr. 2 Ext. Hyoscyami ... gr. 1 Ext. Nucis Vomicæ gr. 1/2 Pil. Rhei Comp. ... gr. 1 Olei Cari ... ... min. 1/4 This preparation and 'Tabloid' Reduced Iron Compound are of special value in the treatment of neurasthenia, chlorosis and their sequelæ.			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products *—continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Residuum Rubrum, gr. 5 ...	1 to 4	—	100
,, Resina Podophylli (*see* Podophyllin, *page* 208).			
,, Resorcin (Resorcinol), gr. 3...	1 to 2	—	100
,, Rhubarb, gr. 3	1 to 4 or more	25	100
,, Rhubarb and Soda	1 to 5	25	100
℞ Pulv. Rhei ... ... gr. 3 Sodii Bicarbonatis... gr. 1-1/2 Pulv. Zingiberis ... gr. 1/2			
,, Rhubarb Compound Pill ...	1 to 2	25	100
Each product equals one of the U.S.P. pills.			
,, Rhubarb Compound Powder (Gregory Powder), gr. 5 ...	1 to 4 or more	25	100
Each contains: Rhubarb, gr. 1-1/4; Magnesium Oxide, gr. 3-1/4, and Ginger, gr. 1/2.			
,, Rhubarb, Soda and Magnesia	1 to 5	25	100
℞ Pulv. Rhei ... gr. 1 Sodii Bicarbonatis gr. 1-1/2 Magnesii Carb. Pond. gr. 2 Pulv. Zingiberis ... gr. 1/2			
S			
,, Saccharin, gr. 1/2		100 & 200	
,, Salicin, gr. 5	1 to 4	25	100
,, Salicylic Acid (*Physiologically Pure*), gr. 3	1 to 4 or more	—	100
,, Salicylic Acid (*Physiologically Pure*), gr. 5	1 to 4	—	100
,, Salol (Phenyl Salicylate), gr. 5	1 to 3	25	100
,, Sandal Wood Oil, min. 5, (Capsule), boxes of 25 ...	1 to 3 or more	—	—
,, Sandal Wood Oil, min. 10, (Capsule), boxes of 20 ...	1 to 2	—	—
,, Santonin, gr. 1/2	1 to 4 or more	50	—
,, ,, gr. 1	1 to 4 or more	50	100
,, ,, gr. 2	1 to 3	50	—
,, ,, gr. 3	1 to 2	50	—

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Santonin and Calomel ... R Santonini ... ... gr. 1 Hydrargyri Chloridi Mitis gr. 1	1 to 3	25	100
,, 'Saxin' *(Trade Mark)*, gr. 1/4, bottles of 200 ... ... Excels all sweetening agents in concentration and delicacy of flavour. About 600 times sweeter than sugar.		—	100
,, Seltzer Salt, *Effervescent*, Artificial, tubes of 25 ...	1 or more, as desired	—	—
,, Slippery Elm, bottles of 25 ... Each represents gr. 5 of the mucilage of Slippery Elm Bark.	1 or more	—	100
,, 'Soamin' *(Trade Mark)* (Sodium Para-aminophenyl-arsonate), gr. 1	1 to 10 hypodermically	—	100
,, ,, ,, gr. 5, bottles of 25	1 to 2 hypodermically	—	—
,, Soda-Mint *(Neutralising)* ... R Sodii Bicarbonatis... gr. 4 Ammon. Bicarb. ... gr. 1/12 Ol. Menthæ Piperitæ *q.s.* A most effective compound of antacid, aromatic and stimulating ingredients of exceptional purity. Possesses the advantage over the N.F. product in containing Oil of Peppermint in place of Oil of Spearmint.	1 to 4 or more	30	100
,, Sodium Bicarbonate, gr. 5 ...	1 to 6	40	100
,, ,, ,, gr. 10...	1 to 3	40	100
,, Sodium Borate (*see* Borax)			
,, Sodium Bromide, gr. 5 ...	1 to 6	—	100
,, ,, ,, gr. 10 ...	1 to 3	—	100
,, Sodium Bromide Compound R Sodii Bromidi ... gr. 2 Strontii Bromidi ... gr. 2 Ammonii Bromidi... gr. 1 Sodii Arsenatis ... gr. 1/60	1 to 6	—	100
,, Sodium Citrate, gr. 2 ...	for milk modification	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Sodium Phenolsulphonate (*see* Sodium Sulphocarbolate)			
,, Sodium Phosphate, Effervescent, gr. 60, tubes of 25 ... ... Each represents gr. 30 *(approx.)* of Sodium Phosphate.	1 or more	—	—
,, Sodium Salicylate *(natural)*, gr. 3	1 to 6 or more	25	—
,, ,, ,, ,, gr. 5	1 to 6	25	—
,, Sodium Salicylate *(Physiologically Pure)*, gr. 3 ...	1 to 6 or more	25	100
,, Sodium Salicylate *(Physiologically Pure)*, gr. 5 ...	1 to 6	25	100
,, Sodium Salicylate *(Physiologically Pure)*, gr. 5, *Effervescent*, tubes of 25... ...	1 or more	—	—
,, Sodium Salicylate and Potassium Bicarbonate, of each gr. 5	1 to 6	25	100
,, Sodium Sulphate Compound, Effervescent, tubes of 20 ... ℞ Sodii Sulphatis Exsicc. gr. 30 Potassii Bitartratis gr. 10 Potassii Bicarbonatis gr. 2-1/2 Ess. Zingiberis ... *q.s.* Salis Effervescentis, *q.s.*	1 to 2	—	—
,, Sodium Sulphate, Effervescent, gr. 60, tubes of 25 ... Each represents gr. 30 of Sodium Sulphate	1 or more	—	—
,, Sodium Sulphocarbolate (Phenolsulphonate), gr. 5	1 to 3	—	100
,, Sparteine Sulphate, gr. 1, bottles of 25	1	—	—
,, Spinal Cord Substance, gr. 2-1/2	1 or more	—	100
,, Spleen Substance, gr. 5 ...	1 or more	—	100
,, Strontium Bromide, gr. 5 ...	1 to 6	—	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tabloid' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Strophanthus, each containing the solid ingredients of Tincture of Strophanthus, min. 5	1 repeated as necessary	50	100
Unique in preserving the full therapeutic activity of the true drug.			
,, Strychnine Sulphate, gr. 1/60	1 to 4	50	—
,, ,, ,, gr. 1/30	1 to 2	50	—
,, ,, ,, gr. 1/20	1	50	—
,, ,, ,, gr. 1/15	1	50	—
,, Sugar of Milk (*see* Milk Sugar)			
,, Sulphonal, gr. 5	1 to 6	25	100
,, Sulphur Compound	1 to 4 or more	25	100
℞ Sulphuris Præcipitati gr. 5 Potassii Bitartratis ... gr. 1			
,, Sumbul Compound	1 to 2	—	100
℞ Ext. Sumbul ... gr. 1 Asafœtidæ ... ... gr. 2 Ferri Sulphatis Exsicc. gr. 1 Arseni Trioxidi ... gr. 1/40			
,, Supra-renal Gland, gr. 5 ...	1 to 3	—	100
T			
,, Tannin, gr. 2-1/2	1 to 2	—	100
,, Tar, gr. 1	1 frequently	50	100
,, Tar and Codeine	1 to 4	25	100
℞ Picis Liquidæ ... gr. 1 Codeinæ ... ... gr. 1/8			
,, Tartarated Antimony (*see* Antimony and Potassium Tartrate, *page* 185)			
,, Tea (*see page* 219)			
,, Terebene, min. 5, (Capsule), boxes of 50	1 to 3	—	—
Test Products (*see pages* 135-137)			
,, Tetranitrin (*see* Erythrol Tetranitrate)			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ 'Tablord' — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Thirst Quencher ... ... Containing Tartaric Acid and Sodium Bicarbonate, flavoured with Lemon and 'Saxin.'	1 to 2 or more as desired	25	100
,, Three Bromides, Effervescent, tubes of 25 ... ... R Potassii Bromidi ... 0·4 gm. Sodii Bromidi ... 0·4 gm. Ammonii Bromidi ... 0·2 gm. Salis Effervescentis ... *q.s.*	1 to 2	—	—
,, Three Valerates ... ... R Quininæ Valeratis ... gr. 1 Ferri Valeratis ... gr. 1 Zinci Valeratis ... gr. 1 Retains the full therapeutic activity of the Valerates, whilst concealing their unpleasant odour.	1	—	100
,, Thymol, gr. 1	1 to 2	25	—
,, ,, gr. 2	1	25	—
,, ,, gr. 5	Used in special cases	—	100
,, Thymus Gland, gr. 5 ...	1 to 5	—	100
,, Thyroid Colloid, gr. 1/2 ...	1 or more	—	100
,, Thyroid Gland *(Standardised)*, gr. 1/2	1 or more	—	100
,, ,, ,, gr. 1-1/2	1 or more	—	100
,, ,, ,, gr. 2-1/2	1 or more	—	100
,, ,, ,, gr. 5 ... The most successful Thyroid preparation, standardised to Iodine content.	1	—	100
,, Tinctures— (*See* Aconite, Belladonna, Camphorated Opium, Indian Cannabis, Capsicum, Cinchona, Digitalis, Ginger, Granulated Opium, Hyoscyamus, Nux Vomica and Strophanthus.)			
,, Tonic Compound ... ... R Ferri Pyrophosphatis... gr. 2 Quininæ Bisulphatis gr. 1 Strychninæ Sulphatis... gr. 1/100	1 to 3	25	100

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus:  — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	bots. of
,, Trinitrin (Nitroglycerin), gr. 1/200	1 or more	25	100
,, ,, ,, gr. 1/100	1 to 2	25	100
,, ,, ,, gr. 1/50	1	25	100
One of the many important therapeutic agents in the introduction of which B. W. & Co. were pioneers.			
,, Trinitrin Compound	1 to 2	25	100
℞ Trinitrini ... ... gr. 1/100 Capsicini ... ... gr. 1/200 Mentholis ... ... gr. 1/100			
,, Trional, gr. 5	1 to 6	25	100
,, Turpentine Oil, Rectified, min. 10, (Capsule), boxes of 20 ...	1 or more	—	—
U			
,, Urotropine, gr. 3	1 to 5	25	100
,, ,, gr. 5	1 to 3	25	100
V			
,, 'Varium' (*Trade Mark*) (*formerly known as* 'Tabloid' Ovarian Substance), gr. 5...	1 to 2 or more	—	100
,, Vegetable Laxative (*see* Laxative Vegetable)			
,, Veronal, gr. 5	1 to 2	25	—
,, Viburnum Prunifolium Extract, gr. 2...	1 to 5	—	100
,, Vichy Salt, *Effervescent*, Artificial, N.F., tubes of 25	1 or more, as desired	—	—
,, Vichy Salt, *Effervescent*, Artificial, with Lithium, N.F., tubes of 25	1 or more, as desired	—	— .
In addition to the essential constituents of Vichy Water, each contains Lithium Citrate, gr. 2-1/4.			
,, Vinum Ipecacuanhæ (*see* Ipecac Extract, *page* 199)			

Pharmacopœial preparations are U.S.P. unless otherwise stated

Write the Brand in full, thus: ℞ Tabloid — — —

'Tabloid' Brand Products—*continued*

'TABLOID' BRAND—	DOSE	Issued in oval bots. of	Issued in bots. of
,, Violet Dye, Aniline, gr. 30, tubes of 12		—	—
,, Voice (Potassium Chlorate, Borax and Cocaine Co.) ... In graven white-metal boxes each containing 25 or 80	1 as required	25	80

Z

,, Zinc Oxide, gr. 2	1 to 5	—	100
,, Zinc Sulphate, etc. (*see* 'Soloid' Brand Products, *pages* 175-180)			
,, Zinc Valerate, gr. 2	1	—	100
,, Zinc Valerate Compound ...	1	—	100
℞ Zinci Valeratis ... gr. 1 Pulv. Rhei ... gr. 1 Ext. Belladonnæ ... gr. 1/8 Pulv. Zingiberis ... gr. 1			
,, Zinc Valerate and Asafetida Compound	1	—	100
℞ Zinci Valeratis ... gr. 1 Asafœtidæ ... ... gr. 1 Myrrhæ ... ... gr. 1/2			
,, Zinc Valerate with Iron and Arsenic	1	—	100
℞ Zinci Valeratis ... gr. 2 Ferri Reducti ... gr. 1 Arseni Trioxidi ... gr. 1/60 Ext. Gentianæ ... gr. 1			
,, Zingib. (*see* Ginger, *page* 195)			

'Tabloid' Brand Products are also issued in bottles of 500, with the exception of those put up in tubes only.

Also a wide range of other products issued under the 'Tabloid' Brand.

'Tabloid' Brand Tea provides the most convenient, portable and effective means of quickly preparing tea of uniform strength. It is the most suitable tea for travellers, sportsmen, cyclists, pleasure parties, etc. A tin of

'Tabloid' Brand Tea—*continued*

'Tabloid' Tea and a bottle of 'Tabloid' 'Saxin' for sweetening the infusion may be conveniently carried in the waistcoat-pocket.

In enamelled tins containing 100 and 200.

'Tabloid' Brand Tea, Special Blend, exceptional quality—

In enamelled tins containing 100 and 200.

Terebene, Pure (B. W. & Co.)— DOSE

1, 2 and 16 fl. oz. bottles ... ... 5 to 15 min.

Test Cases, 'Soloid' Brand *(see* Analysis Cases, *page* 135*)*

Tow, Carbolised, Pleated Compressed, 'Tabloid' Brand (*see* Dressings, *page* 150)

Towels, Sanitary, Pleated Compressed, 'Tabloid' Brand *(see page* 172*)*

VACCINES, TRADE MARK 'WELLCOME' BRAND

The word 'WELLCOME' is a brand which designates fine products issued by Burroughs Wellcome & Co.

The 'WELLCOME' Brand VACCINES are prepared, under U.S.A. Government Licence, No. 18, at the Wellcome Physiological Research Laboratories, Brockwell Hall, London, England. Every stage of the preparation is carried out under the immediate supervision of a skilled staff of highly-qualified experts. Being exceptionally pure, sterile, and accurately standardised, the 'Wellcome' Brand Vaccines are used with confidence to stimulate that elaboration of antibodies which is the essential feature of successful immunisation.

Vaccines should be kept in a cool dark place, and protected from extremes of temperature.

'Wellcome' Brand Vaccines are issued in hermetically-sealed phials.

'WELLCOME' BRAND—

„ Gonococcus Vaccine

(A) 1 c.c. containing 20 million organisms
(B) 1 c.c. „ 200 „ „
(C) 1 c.c. „ 1000 „ „

Vaccines, 'Wellcome' Brand—*continued*

'WELLCOME' BRAND—

,, Staphylococcus Vaccine, Aureus

(A) 1 c.c. containing 200 million organisms
(B) 1 c.c. ,, 1000 ,, ,,

,, Staphylococcus Vaccine, Mixed

(A) 1 c.c. containing 200 million organisms
(B) 1 c.c. ,, 1000 ,, ,,

,, Streptococcus Vaccine, Polyvalent

(A) 1 c.c. containing 10 million organisms
(B) 1 c.c. ,, 50 ,, ,,

,, Typhoid Vaccine

0·5 c.c. containing 500 million organisms
1 c.c. ,, 1000 ,, ,,

TRADE MARK 'VALOID' BRAND PRODUCTS

The word 'VALOID' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

'VALOID' BRAND—

	DOSE
,, Aromatic Cascara Sagrada, 4 Imperial fl. oz. bottles	10 to 60 min.
,, Ergot, 4 Imperial fl. oz. bottles	10 to 30 min.

The strength of each 'Valoid' preparation is indicated on the label

Various other products are also issued under this brand

TRADE MARK 'VALULE' BRAND PRODUCTS

The word 'VALULE' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

'VALULE' BRAND—	DOSE
,, Bone Medulla, gr. 5, bottles of 100 ...	1 or more

(*See also* 'Tabloid' Bone Medulla, *page* 188)

Various other products are also issued under this brand

'VANA' *(Trade Mark)* **Brand Tonic Wine**— DOSE

In bottles of 16 Imperial fl. oz. Half a wineglassful

TRADE MARK 'VAPOROLE' BRAND PRODUCTS

The word 'VAPOROLE' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of pure and reliable preparations, this brand should always be specified when ordering.

'VAPOROLE' BRAND— DOSE

For Hypodermic Injection

,, Calomel, 0·05 gm. Sterile Suspension in a Neutral Fatty Basis, with Creosote and Camphor, boxes of 10 ... ... 1 (by injection)

,, 'Ernutin' *(Trade Mark)*, min. 10, *sterile*, boxes of 6 ... ... 1 (by injection)

,, Grey Oil. Sterile Suspension of 0·1 gm. of Mercury in a Neutral Fatty Basis (1 c.c.), boxes of 10 ... ... 1 (by injection)

,, Iron and Arsenic, Sterilised Solution, boxes of 10 ... ... 1 to 3 (by injection)

℞ Ferri Citratis Viridis ... 0·05 gm.
Sodii Arsenatis Exsicc. ... 0·002 gm.
Aquam ... ... ad 1 c.c.

,, Pituitary (Infundibular) Extract, *sterilised*, 1 c.c. = 0·2 gm. of fresh substance, boxes of 6 ... ... 1 (by injection)

For Inhalation

,, Amyl Nitrite, min. 3 and min. 5 (glass capsules), boxes of 12 ... ... 1 (by inhalation)

,, Aromatic Ammonia (glass capsules), enclosed in silken sacs, boxes of 12. *For use as "Smelling Salts"* ... ... 1 (by inhalation)

Various other products are also issued under this brand

'Vaporole' Brand Ammonium Chloride Inhaler

Delivers perfectly neutral fumes of pure ammonium chloride. A model of compactness, convenience and utility.

'VAPOROLE' ACID AND ALKALI, for use in the above Inhaler, are supplied in boxes of 12.

Veterinary Hypodermic Products, 'Tabloid' Brand
(See B. W. & Co.'s Price List)

Veterinary Ophthalmic Products, 'Tabloid' and 'Soloid' Brands *(See B. W. & Co.'s Price List)*

Vulcanite Nozzles—Curved and Straight.

To screw on collapsible tubes of 'Hazeline' Cream, etc., when it is desired to apply these preparations to the mucous membranes of the nose, ear, urethra or rectum.

Water Analysis, A Simple Method of (6th Edition)

By J. C. THRESH, M.D., D.Sc., etc.

This standard text-book affords all the information necessary to enable those with only a small knowledge of analysis to perform a chemical examination of a sample of drinking-water by means of 'Soloid' Brand Water Analysis Cases. A chapter on the examination of sewage effluents is included.

Water Analysis Cases, 'Soloid' Brand *(see page 135)*

'Wellcome' Brand Products *(see pages 223–233)*

Verbal Instructions are not safe. To prevent fraud, it is best to write prescriptions for original bottles. . .

TRADE MARK 'WELLCOME' BRAND PRODUCTS

The word 'WELLCOME' is a brand which designates fine products issued by Burroughs Wellcome & Co. To ensure the supply of these pure and reliable preparations, this brand should always be specified when ordering.

Purity and reliability

The purity and reliability of drugs are matters of the utmost importance to prescriber, dispenser and patient alike, and every opportunity should therefore be taken to ensure the supply of those chemicals which are known to be thoroughly genuine and trustworthy.

In order that products answering to this description in the highest sense may be at the disposal of the profession, Burroughs Wellcome & Co. prepare and issue a series of fine chemicals, alkaloids, etc., under the distinctive title of the 'Wellcome' Brand.

Doses in Imperial and Metric weights

The recognised doses of 'Wellcome' Brand Chemicals are indicated on the labels, and in the body of this handbook, in terms of both the Imperial and Metric systems. The limits of dosage given are approximately the same in each system, but exact equivalence has not been attempted, since no useful object would be served, and awkward and confusing figures would result.

Recent additions

The new soluble Bismuth Salts and the soluble Iron Arsenate are the outcome of investigations conducted in the Wellcome Chemical Research Laboratories, and mark a great advance in the preparation of scale salts. Particular attention has also been devoted to the preparation of fine alkaloids, and the standards of purity adopted are higher in many instances than those of the United States Pharmacopœia.

'Wellcome' Brand Chloroform embodies the results of the most recent researches, and provides an anæsthetic of the highest attainable degree of purity and freedom from irritating products of decomposition.

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Aconitine, U.S.P.

The pure crystallised alkaloid from *Aconitum napellus*, free from pseudaconitine and japaconitine, and from the non-toxic aconine and benzaconine. Owing to its extremely poisonous properties aconitine should be prescribed and dispensed with the utmost caution.

DOSE—gr. 1/640 to gr. 1/400 (0·0001 gm. to 0·00015 gm.)
U.S.P. AVERAGE DOSE—0·00015 gm. (gr. 1/400)
Issued in tubes of gr. 5 (0·3 *gm.*)

,, Aconitine Hydrobromide

The most suitable salt of aconitine for therapeutic use. It is readily soluble in water, perfectly stable, and of uniform composition. The remarks as to purity and dosage of the alkaloid apply also to this salt.

DOSE—gr. 1/640 to gr. 1/400 (0·0001 gm. to 0·00015 gm.)
Issued in tubes of gr. 5 (0·3 *gm.*)

,, Aloin, U.S.P.

Free from resin. Lighter in colour and affords a clearer solution than the usual commercial article.

DOSE—gr. 1/2 to gr. 2 (0·03 gm. to 0·13 gm.)
U.S.P. AVERAGE DOSE—0·065 gm. (gr. 1)
Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Aloin, Crystal

Well-defined crystals. Free from resin.

DOSE—gr. 1/2 to gr. 2 (0·03 gm. to 0·13 gm.)
Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*

., Bismuth Citrate

Practically free from nitrate (containing less than 0·05 per cent. of N_2O_5). Renders a clear solution with ammonia. Yields by the official test 56-58 per cent. Bi_2O_3.

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)
U.S.P. AVERAGE DOSE—0·125 gm. (gr. 2)
Issued in bottles of oz. 4 (113 *gm.*), *oz.* 8 (227 *gm.*), *and oz.* 16 (454 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Bismuth and Iron Citrate *(Soluble)*

In yellowish-green scales, readily soluble in water. The bismuth and ferric citrates are combined in this preparation so as to represent as nearly as possible equal parts by weight of the respective anhydrous salts.

DOSE—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Bismuth and Lithium Citrate *(Soluble)*

In handsome, colourless scales, readily soluble in water. Its exhibition is indicated when the therapeutic effects of lithium in conjunction with those of bismuth are desired. The proportion of lithium, in combination, corresponds to 25–30 per cent., by weight, of anhydrous lithium citrate.

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Calcium Glycerophosphate

DOSE—gr. 2 to gr. 5 (0·13 gm. to 0·3 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Calcium Hypophosphite, U.S.P.

Special attention is invited to this salt and to its property of readily rendering a perfectly clear solution with water. It conforms strictly in all respects to the U.S.P. requirements.

DOSE—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·5 gm. (gr. 7-1/2)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

.. Chloroform, U.S.P.

Of exceptional purity and reliability. Specially prepared for the use of anæsthetists. Free from all irritating products of decomposition.

DOSE—min. 1 to min. 5 (gtt. 1 to gtt. 5)

U.S.P. AVERAGE DOSE—0·3 c.c. (min. 5)

Issued in amber-coloured stoppered bottles of oz. 2 (57 *gm.*), 1/4 *lb.* (113 *gm.*), 1/2 *lb.* (227 *gm.*), *and* 1 *lb.* (454 *gm.*) : *and in hermetically-sealed tubes of* 1/4 *lb.*, (113 *gm.*) 30 *c.c.* (*approx.* 1 *fl. oz.*) *and* 60 *c.c.* (*approx.* 2 *fl. oz.*)

.. Emetine *(Pure Alkaloid)*

This is the essential alkaloid of ipecacuanha, and not the mixture of alkaloids formerly known as emetine.

DOSE—As an expectorant, gr. 1/200 to gr. 1/50 (0·0003 gm. to 0·0013 gm.)

As an emetic, gr. 1/6 to gr. 1/3 (0·01 gm. to 0·02 gm.)

Issued in tubes of gr. 15 (1 *gm.*) *and bottles of gr.* 60 (3·9 *gm.*)

.. Emetine Hydrobromide

The most suitable salt of emetine for therapeutic use.

DOSE—As an expectorant, gr. 1/200 to gr. 1/50 (0·0003 gm. to 0·0013 gm.)

As an emetic, gr. 1/6 to gr. 1/3 (0·01 gm. to 0·02 gm.)

Issued in tubes of gr. 15 (1 *gm.*) *and bottles of gr.* 60 (3·9 *gm.*)

.. Ether *(Pure)*

Prepared specially for anæsthesia. Its standard exceeds that of the U.S.P.

Sp. gr. (at 25° C.), 0·720.

Issued in hermetically-sealed tubes of 30 *c.c. and* 60 *c.c.* = *approx.* 1 *and* 2 *fl. oz.*

.. Ferric Phosphate *(Soluble)*

See Iron Phosphate *(Soluble)*, *page* 228

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Gelsemine Hydrochloride (Gelsemininum Hydrochloricum Cryst., Ger.)

A salt of the crystallisable alkaloid of *Gelsemium nitidum.*

DOSE—gr. 1/120 to gr. 1/30 (0·0005 gm. to 0·002 gm.)

Issued in tubes of gr. 5 (0·3 *gm.*) *and gr.* 15 (1 *gm.*)

,, Homatropine *(Pure)*

Issued in tubes of gr. 5 (0·3 *gm.*)

,, Homatropine Hydrobromide, U.S.P.

Recent research on the synthetic tropeïnes in the Wellcome Chemical Research Laboratories has enabled this salt of homatropine (mandelyltropeïne) to be presented in an exceptionally pure form. The importance of this high degree of purity is best realised when the use of the minute dose of the drug as a mydriatic is considered.

DOSE—gr. 1/80 to gr. 1/20 (0·0008 gm. to 0·003 gm.)

U.S.P. AVERAGE DOSE—0·0005 gm. (gr. 1/128)

Issued in tubes of gr. 5 (0·3 *gm.*)

,, Homatropine Methylbromide

Issued in tubes of gr. 5 (0·3 *gm.*)

,, Hydrastine *(Pure Alkaloid)*, U.S.P.

The crystallised white alkaloid from *Hydrastis canadensis.*

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

U.S.P. AVERAGE DOSE—0·010 gm. (gr. 1/5)

Issued in tubes of gr. 15 (1 *gm.*) *and bottles of oz.* 1 (28·3 *gm.*)

,, Hydrastine Hydrochloride

This salt of the pure white alkaloid is readily soluble in water.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

Issued in tubes of gr. 15 (1 *gm.*) *and bottles of oz.* 1 (28·3 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Hydrastinine Hydrochloride, U.S.P.

An oxidation product of the alkaloid hydrastine, free from other bases generally associated with the production of this salt.

DOSE—gr. 1/4 to gr. 1/2 (0·015 gm. to 0·03 gm.)

U.S.P. AVERAGE DOSE—0·030 gm. (gr. 1/2)

Issued in tubes of gr. 5 (0·3 *gm.*) *and* 1 *gm.*

,, Iron Arsenate *(Soluble)*

In handsome green scales, readily soluble in water. Arsenic content is equivalent to 34–35 per cent. of anhydrous ferric arsenate. May conveniently be used for the preparation of a solution similar to the Syrup of Arsenate of Iron, N.F.

DOSE—gr. 1/16 to gr. 1/4 (0·004 gm. to 0·015 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*)

,, Iron Glycerophosphate

Handsome scales, readily soluble in warm water.

DOSE—gr. 3 to gr. 6 (0·2 gm. to 0·4 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Iron Hypophosphite *(Soluble)*

In handsome greenish scales, distinguished from the ordinary iron hypophosphite by being readily soluble in water. Contains about 12 per cent. of iron.

DOSE—gr. 1 to gr. 5 (0·06 gm. to 0·3 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Iron Phosphate *(Soluble)*, U.S.P.

In the form of bright green transparent scales, freely soluble in water. Conforms in every respect to the requirements of the United States Pharmacopœia.

DOSE—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·25 gm. (gr. 4)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Iron Pyrophosphate *(Soluble)*, U.S.P.

DOSE—gr. 5 to gr. 10 (0·3 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·25 gm. (gr. 4)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

,, Magnesium Glycerophosphate

DOSE—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese and Iron Citrate *(Soluble)*

A scale salt, readily soluble in water, containing about 7 per cent. of manganese and 14 per cent. of iron in organic combination.

DOSE—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Manganese and Iron Citrate with Arsenic *(Soluble)*

Contains 0·5 per cent. of arsenic trioxide, but is otherwise identical with Manganese and Iron Citrate *(Soluble)*. (*See* above.)

DOSE—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese and Iron Citrate with Quinine *(Soluble)*

Contains 15 per cent. of quinine, but is otherwise identical with Manganese and Iron Citrate *(Soluble)*. (*See* above.)

DOSE—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Manganese and Iron Citrate with Strychnine *(Soluble)*

Contains 1 per cent. of strychnine, but is otherwise identical with Manganese and Iron Citrate *(Soluble)*. (*See* above.)

DOSE—gr. 1 to gr. 3 (0·06 gm. to 0·2 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Manganese and Iron Phosphate *(Soluble)*

A scale salt readily soluble in warm water. Contains about 7 per cent. of manganese and 14 per cent. of iron.

DOSE—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Manganese Citrate *(Soluble)*

In the form of handsome, nearly colourless scales, which are readily soluble in water. Contains about 12 per cent. of manganese in organic combination.

DOSE—gr. 3 to gr. 10 (0·2 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Mercurous Chloride, U.S.P. (Calomel)

Of uniform physical character, prepared by sublimation. Being free from mercuric chloride and other contaminations, it possesses desirable uniformity of action. Guaranteed English preparation.

DOSE—gr. 1/2 to gr. 5 (0·03 gm. to 0·3 gm.)

U.S.P. AVERAGE DOSE—{ Laxative, 0·125 gm. (gr. 2)
{ Alterative, 0·065 gm. (gr. 1)

Issued in bottles of oz. 4 (113 *gm.*), *oz.* 8 (227 *gm.*) *and oz.* 16 (454 *gm.*)

,, Physostigmine *(Pure Alkaloid)*

Issued in tubes of gr. 2 (0·13 *gm.*) *and gr.* 5 (0·3 *gm.*)

,, Physostigmine Hydrobromide (Eserine Hydrobromide)

DOSE—gr. 1/60 to gr. 1/20 (0·001 gm. to 0·003 gm.)

Issued in tubes of gr. 5 (0·3 *gm.*) *and gr.* 15 (1 *gm.*)

,, Physostigmine Salicylate (Eserine Salicylate), U.S.P.

DOSE—gr. 1/60 to gr. 1/20 (0·001 gm. to 0·003 gm.)

U.S.P. AVERAGE DOSE—0·001 gm. (gr. 1/64)

Issued in tubes of gr. 5 (0·3 *gm.*) *and gr.* 15 (1 *gm.*)

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

.. Physostigmine Sulphate (Eserine Sulphate), U.S.P.

DOSE—gr. 1/60 to gr. 1/20 (0·001 gm. to 0·003 gm.)

U.S.P. AVERAGE DOSE—0·001 gm. (gr. 1/64)

Issued in tubes of gr. 2 (0·13 *gm.*) *and gr.* 5(0·3 *gm.*)

.. Pilocarpine Hydrochloride, U.S.P.

The 'Wellcome' Brand salts of pilocarpine are free from the less active isopilocarpine and the inactive pilocarpidine. Their purity is guaranteed by their respective melting points, which are indicated on each package.

DOSE—gr. 1/20 to gr. 1/2 (0·003 gm. to 0·03 gm.)

U.S.P. AVERAGE DOSE—0·010 gm. (gr. 1/5)

Issued in tubes of gr. 15 (1 *gm.*); *and in bottles of gr.* 60 (3·9 *gm.*), *oz.* 1/2 (14 *gm.*) *and oz.* 1 (28·3 *gm.*)

.. Pilocarpine Nitrate, U.S.P.

This salt of pilocarpine is stable, and is the one best adapted for general use.

DOSE—gr. 1/20 to gr. 1/2 (0·003 gm. to 0·03 gm.)

U.S.P. AVERAGE DOSE—0·010 gm. (gr. 1/5)

Issued in tubes of gr. 15 (1 *gm.*); *and in bottles of gr.* 60 (3·9 *gm.*), *oz.* 1/2 (14 *gm.*) *and oz.* 1 (28·3 *gm.*)

.. Podophyllin (Resina Podophylli, U.S.P.)

Prepared strictly in accordance with the official method, from a carefully-selected drug.

DOSE—gr. 1/4 to gr. 1 (0·015 gm. to 0·06 gm.)

U.S.P. AVERAGE DOSE—{ Purgative, 0·015 gm. (gr. 1/4) / Laxative, 0·005 gm. (gr. 1/10)

Issued in bottles of oz. 1 (28·3 *gm.*), *oz.* 4 (113 *gm.*) *and oz.* 8 (227 *gm.*)

.. Potassium Glycerophosphate

A syrupy liquid containing 50 per cent. of anhydrous potassium glycerophosphate.

DOSE—gr. 3 to gr. 8 (0·2 gm. to 0·5 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

For prices, see separate list

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Quinine Bihydrochloride

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*)

,, Quinine Bisulphate, U.S.P.

Being readily soluble in water (1 in 10), this salt is more convenient for many purposes than the insoluble official sulphate.

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·250 gm. (gr. 4)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Quinine Hydrobromide, U.S.P.

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·250 gm. (gr. 4)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Quinine Hydrochloride, U.S.P.

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·250 gm. (gr. 4)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

,, Quinine Hypophosphite

DOSE—gr. 1 to gr. 3 (0·06 gm. to 0·2 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*)

,, Quinine Lactate

DOSE—gr. 1 to gr. 5 (0·06 gm. to 0·3 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*)

,, Quinine Phosphate

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

Issued in bottles of oz. 1 (28·3 *gm.*)

,, Quinine Salicylate, U.S.P.

Prepared from physiologically pure salicylic acid.

DOSE—gr. 2 to gr. 6 (0·13 gm. to 0·4 gm.)

U.S.P. AVERAGE DOSE—0·250 gm. (gr. 4)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*)

'Wellcome' Brand Products—*continued*

'WELLCOME' BRAND—

,, Quinine Sulphate, U.S.P.

This salt is presented in a more compact form of crystals than that usually supplied, but is identical in composition with the official salt. It is believed that its diminished bulk will render it more convenient for storage and dispensing.

When ordering Quinine Sulphate, please indicate whether "compact" or "large flake" is required.

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·250 gm. (gr. 4)

Issued in bottles of oz. 1 (28·3 *gm.*) *and oz.* 4 (113 *gm.*); *also in tins of oz.* 25 (709 *gm.*) *and oz.* 100 (2835 *gm.*)

,, Quinine Sulphate *(Large Flake)*, U.S.P.

This is the official salt in the usual bulky form of light feathery crystals. We recommend in preference the compact crystals, which occupy one-third the space, as being more portable and convenient.

When ordering Quinine Sulphate, please indicate whether "compact" or "large flake" is required.

DOSE—gr. 1 to gr. 10 (0·06 gm. to 0·65 gm.)

U.S.P. AVERAGE DOSE—0·250 gm. (gr. 4)

Issued in bottles of oz. 1/4 (7 *gm.*), *oz.* 1/2 (14 *gm.*) *and oz.* 1 (28·3 *gm.*); *and in tins of oz.* 4 (113 *gm.*); *also in tins of oz.* 25 (709 *gm.*) *and oz.* 100 (2835 *gm.*)

For prices, see separate list

TRADE MARK **'WELLCOME' BRAND CHEMICALS**

WERE AWARDED

A GRAND PRIZE
at the
International Exposition
St. Louis, 1904

A GRAND PRIZE
at the
International Exhibition
Milan, 1906

A GRAND PRIZE
at the
International Exhibition
Liége, 1905

TWO GRAND PRIZES
at the
Franco-British Exhibition
London, 1908

TRADE MARK 'WELLCOME' BRAND CHLOROFORM

The Ideal Anæsthetic

In 'WELLCOME' Brand CHLOROFORM anæsthetists find a product of unvarying reliability, which is exceptional in purity and uniformity of composition.

It contains precisely that small, yet definite, proportion of ethyl chloride, which clinical experience has shown to be so beneficial in the induction of chloroform anæsthesia.

Greatly reduced

TRADE MARK 'WELLCOME' BRAND ETHER

'WELLCOME' Brand ETHER, specially prepared for anæsthesia, is thoroughly pure and reliable. Specific gravity (at 25° C.), 0·720. The hermetically-sealed tubes in which it is issued prevent the escape of the volatile contents, and are convenient and portable.

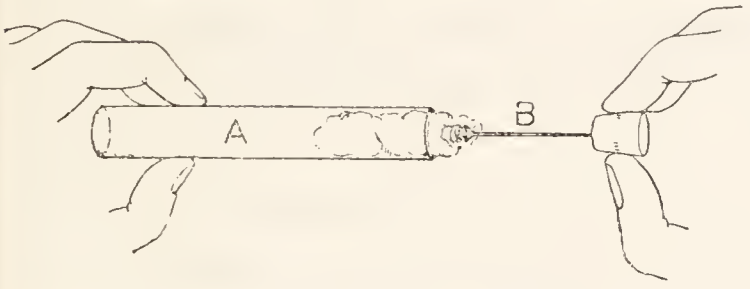
(See also page 226)

TRADE MARK 'WELLCOME' BRAND

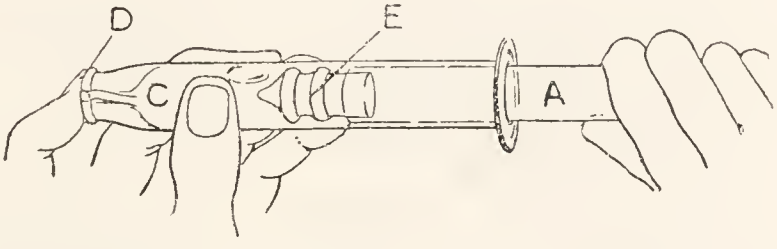
SERA IN SYRINGE-CONTAINERS

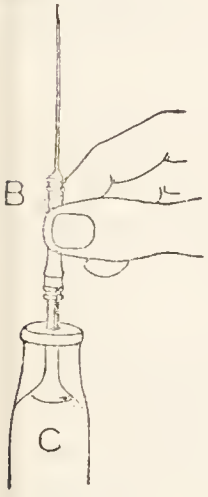
Each container presents an accurate dose of Serum in a *thoroughly reliable* Syringe.

As it lies in its case this acme of convenience presents only two parts—the partly hollow piston A containing the needle B, and the barrel C containing the Serum. When the syringe is required the cork in which the needle B is embedded is withdrawn from A, and placed on a clean surface.



The waxed end D of the barrel is then pressed with the fore-finger of the left hand and the piston screwed on to the projecting portion E of the rubber plunger.





The wool is now removed from the needle, the waxed sealing disc D from the barrel, and the needle attachment screwed home; then, on the cork and wire being removed from the needle, the instrument is ready for use.

(See also pages 172-174*)*

BURROUGHS WELLCOME & CO.

LONDON (ENG.)

NEW YORK MONTREAL SYDNEY CAPE TOWN

MILAN SHANGHAI

U.S.A. Offices and Exhibition Room:

35, 37 & 39, WEST THIRTY-THIRD STREET
(NEAR FIFTH AVENUE), NEW YORK CITY

Cables and Marconigrams—"TABLOID, NEW YORK"

Telephone No.—"508 MURRAY HILL" *(two lines)*

A B C *and* LIEBER'S *Telegraphic Codes used*

o o o

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o o o

DEPOTS IN U.S.A.

ATLANTA, GA.—Jacobs' Pharmacy Co., 10, Marietta Street

BALTIMORE, MD.—Muth Bros. & Co., 23, South Charles Street

BOSTON, MASS.—Eastern Drug Co., 8-20, Fulton Street

CHICAGO, ILL.—E. H. Buehler, 134, Lake Street

DALLAS, TEX.—J. W. Crowdus Drug Co.

DULUTH, MINN.—Leithhead Drug Co.

HOUSTON, TEX.—Houston Drug Co., 102, Travis Street

INDIANAPOLIS, IND.—Kiefer Drug Co.

KANSAS CITY, MO.—Faxon & Gallagher

LOS ANGELES, CAL.—Brunswig Drug Co. (late F. W. Braun & Co.), 501, N. Main Street

LOUISVILLE, KY.—Robinson-Pettet Co., 528-532, West Main Street

NEW ORLEANS, LA.—Finlay, Dicks & Co., Magazine and Common Streets

PHILADELPHIA, PA.—Smith, Kline & French Co., 429-435, Arch Street

PHŒNIX, ARIZ.—N. M. Miller

PITTSBURG, PA.—W. J. Gilmore & Co., 426, Seventh Avenue

PORTLAND, OREGON.—The Clarke Woodward Drug Co., 401-407, Hoyt Street

ST. LOUIS, MO.—Meyer Bros. Drug Co., Fourth and Clark Streets

ST. PAUL, MINN.—Noyes Bros. & Cutler, 396-408, Sibley Street

SAN ANTONIO, TEX.—San Antonio Drug Co.

SAN FRANCISCO, CAL.—Langley & Michaels Co., 34-40, First Street

SEATTLE, WASH.—Stewart Holmes Drug Co., 209-211, Third Avenue Street

SPOKANE, WASH.—The Spokane Drug Co.

MEMORANDA

MEMORANDA

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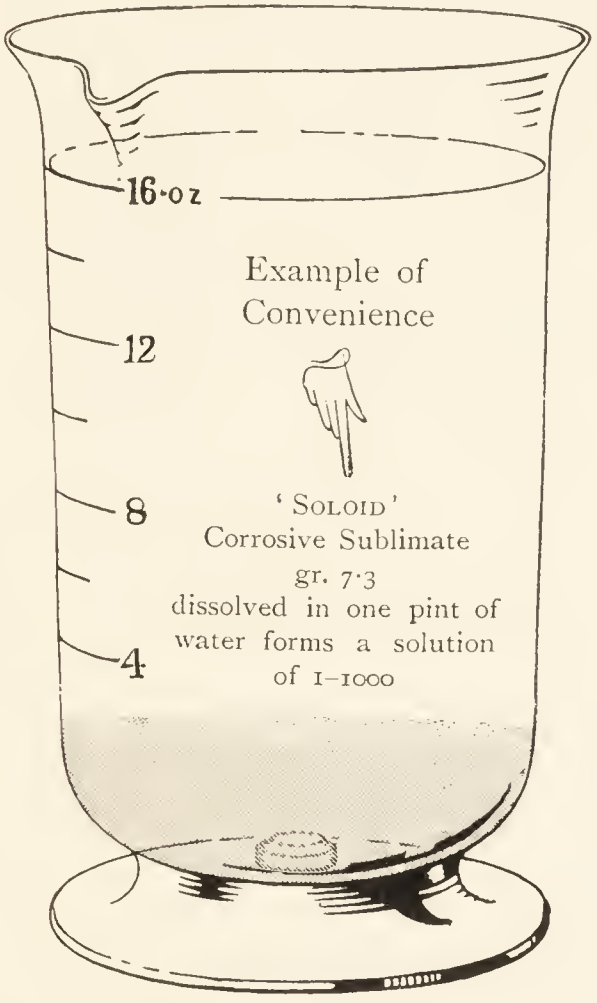
TRADE MARK 'SOLOID' BRAND

ANTISEPTICS, ASTRINGENTS, ETC.

Pure, Accurate, Soluble



Although compressed into such small compass, 'SOLOID' products begin to dissolve as soon as they are added to water: by stirring and making up to mark, clear solutions of required strength are obtained.

(See also pages 176-182)

TRADE MARK 'ERNUTIN' BRAND PRODUCTS

The Ideal Form of Ergot

'ERNUTIN' presents the active therapeutic principles of Ergot, viz., the alkaloid Ergotoxine, and 'Tyramine' (Para-hydroxyphenylethylamine), pure and in a physiologically standardised solution.

In post-partum hæmorrhage, normal confinements, and in all other conditions in which Ergot is indicated, 'ERNUTIN' is preferable.

'ERNUTIN' (Oral) and 'VAPOROLE' 'ERNUTIN' for hypodermic administration are issued.

(See also pages 154 and 221)

TRADE MARK 'TABLOID' BRAND HYPODERMIC MERCURIC SUCCINIMIDE

Freely soluble in water; does not coagulate albumin, is less liable than other preparations of mercury to set up local irritation, and therefore particularly suitable for hypodermic application. Used with good results in syphilis and tuberculosis.

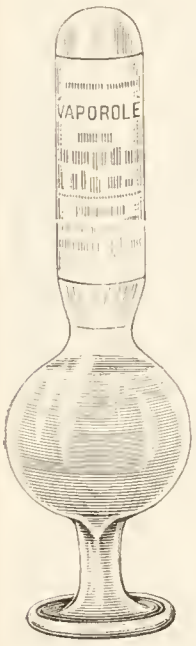
In the latter, improvement in the general condition, reduction of temperature, gain in weight, and curing of advanced laryngeal and pharyngeal ulceration have been reported, as well as improvements in advanced pulmonary lesions and decidedly beneficial effects on tubercular glands.

(See also pages 156, 159 and 163)

TRADE MARK 'VAPOROLE' BRAND PRODUCTS

A series of medicaments of exceptional purity and reliability.

'VAPOROLE' Products for Hypodermic injection present accurate doses in hermetically-sealed containers. When using these, after sterilising the syringe, it is only necessary to break off the tubular top and draw the sterile preparation into the barrel.



'Vaporole' Hypodermic Product
Actual size

'VAPOROLE' Products for Inhalation are supplied in thin glass capsules surrounded with absorbent material and enclosed in silk. For use, the product is crushed between the thumb and forefinger.

TRADE MARK 'VAPOROLE' BRAND PITUITARY EXTRACT (Infundibular)

A sterile extract prepared from fresh substance. Administration, which is most effective hypodermically or intramuscularly, produces a strong and lasting rise of the blood-pressure. It strengthens the heart-beat, causes profuse micturition and strong uterine contraction.

Clinically it has been found to stimulate peristalsis in conditions of intestinal atony and paresis.

(See also page 221)

TRADE MARK

'ALAXA' BRAND

Aromatic Liqueur of Cascara Sagrada

An elegant and palatable laxative liqueur, scientifically prepared from carefully selected and fully matured bark of the true cascara sagrada.

Its attractive appearance and pleasant flavour and aroma entitle it to be classed as a liqueur.

Greatly reduced

The tonic laxative action possessed by 'Alaxa' enables it to take the place of the after-dinner pill. In the constipation of pregnancy and in all cases due to lack of intestinal tone, it is particularly acceptable, and the more so as the amount taken can be regulated with perfect exactitude. It is especially suitable for the use of children and fastidious women, and for administration to the aged and feeble.

'Alaxa' is perfectly stable and neither ferments nor deposits on keeping.

Supplied in bottles of 4 *fluid ounces*

(See also page 147*)*

'KEPLER' SOLUTION

(Trade Mark)

Of Cod Liver Oil in Malt Extract

'KEPLER' SOLUTION presents the finest Norwegian Cod Liver Oil scientifically and inseparably incorporated with the well-known 'Kepler' Malt Extract.

Its ready digestibility and supreme activity as an energiser and body-builder render it of inestimable value to members of strumous or phthisical families; also in cases of gastric ulcer or gastric catarrh, infantile diarrhœa, and the dyspepsia and diarrhœa of phthisis.

Greatly reduced

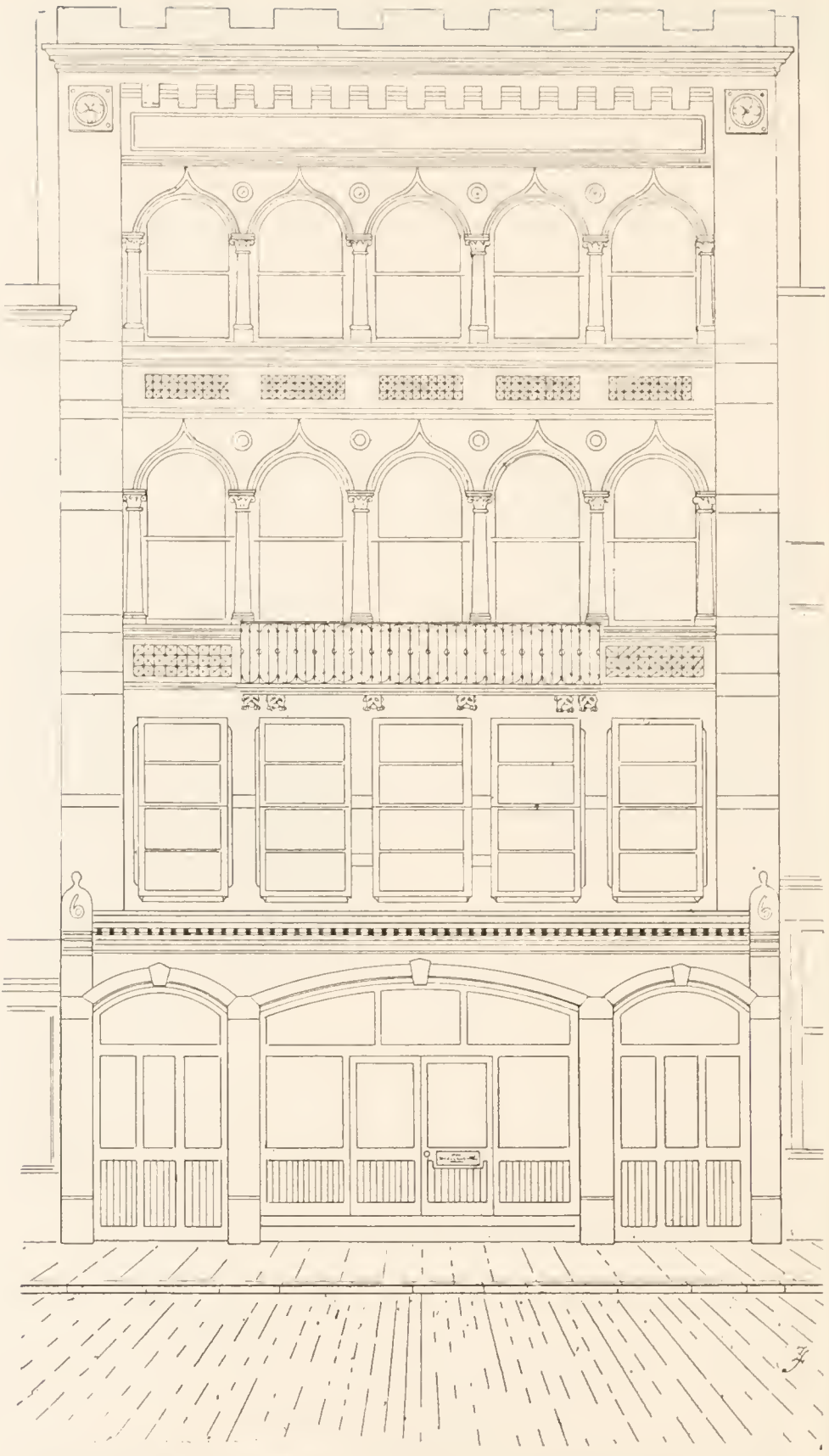
'KEPLER' SOLUTION is characterised by a rich nutty malt flavour, which is irresistible.

As a galactogogue it takes a foremost place, increasing the supply of milk and improving the quality.

The following combinations are also supplied:—

'KEPLER' SOLUTION with Iron Iodide
" " " Phosphorus

(See also pages 162, 163)



WELLCOME CHEMICAL RESEARCH LABORATORIES
KING STREET, LONDON (ENGLAND)

This INSTITUTION is conducted separately from the business of BURROUGHS WELLCOME & CO., and is under distinct direction, although in the Laboratories a large amount of important scientific work is carried out for the firm.

AWARDS CONFERRED UPON THE

WELLCOME CHEMICAL RESEARCH LABORATORIES

INTERNATIONAL EXPOSITION ST. LOUIS, 1904

ONE GRAND PRIZE

AND

THREE GOLD MEDALS

O

INTERNATIONAL EXHIBITION LIÉGE, 1905

ONE GRAND PRIZE

ONE DIPLOMA OF HONOUR

AND

TWO GOLD MEDALS

O

INTERNATIONAL EXHIBITION MILAN, 1906

ONE GRAND PRIZE

O

FRANCO-BRITISH EXHIBITION LONDON, 1908

TWO GRAND PRIZES

FOR

CHEMICAL AND PHARMACOGNOSTICAL RESEARCH

ETC., ETC.

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AWARDS CONFERRED UPON THE

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INTERNATIONAL EXPOSITION ST. LOUIS, 1904	ONE GRAND PRIZE AND ONE GOLD MEDAL
INTERNATIONAL EXHIBITION LIÉGE, 1905	ONE GRAND PRIZE AND TWO GOLD MEDALS
INTERNATIONAL EXHIBITION MILAN, 1906	ONE GRAND PRIZE
FRANCO-BRITISH EXHIBITION LONDON, 1908	TWO GRAND PRIZES

FOR

PHYSIOLOGICAL RESEARCH AND PREPARATIONS

ETC., ETC.

PORTION OF FRONTAGE
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LONDON (ENG.)
Corner of Holborn Viaduct and Snow Hill
facing Holborn Viaduct Station

AWARDS CONFERRED UPON

BURROUGHS WELLCOME & CO.

INTERNATIONAL EXPOSITION ST. LOUIS, 1904	THREE GRAND PRIZES AND THREE GOLD MEDALS
	△
INTERNATIONAL EXHIBITION LIÉGE, 1905	SIX GRAND PRIZES THREE DIPLOMAS OF HONOUR AND THREE GOLD MEDALS
	△
INTERNATIONAL EXHIBITION MILAN, 1906	THREE GRAND PRIZES THREE DIPLOMAS OF HONOUR AND ONE GOLD MEDAL
	△
FRANCO-BRITISH EXHIBITION LONDON, 1908	SEVEN GRAND PRIZES ONE DIPLOMA OF HONOUR AND TWO GOLD MEDALS
	△
ALASKA—YUKON—PACIFIC EXHIBITION SEATTLE, 1909	ONE GRAND PRIZE

MAKING IN ALL MORE THAN

220 HIGHEST AWARDS

CONFERRED UPON THE FIRM FOR THE

SCIENTIFIC EXCELLENCE OF THEIR PRODUCTS

AT THE GREAT EXHIBITIONS OF THE WORLD

BURROUGHS WELLCOME & CO.'S
NEW YORK OFFICES AND EXHIBITION ROOM
35, 37 & 39, West Thirty-third Street
(near Fifth Avenue), NEW YORK CITY

THE

Trade Marks

'Tabloid'
AND
'Soloid'

} Invented by B. W. & Co.

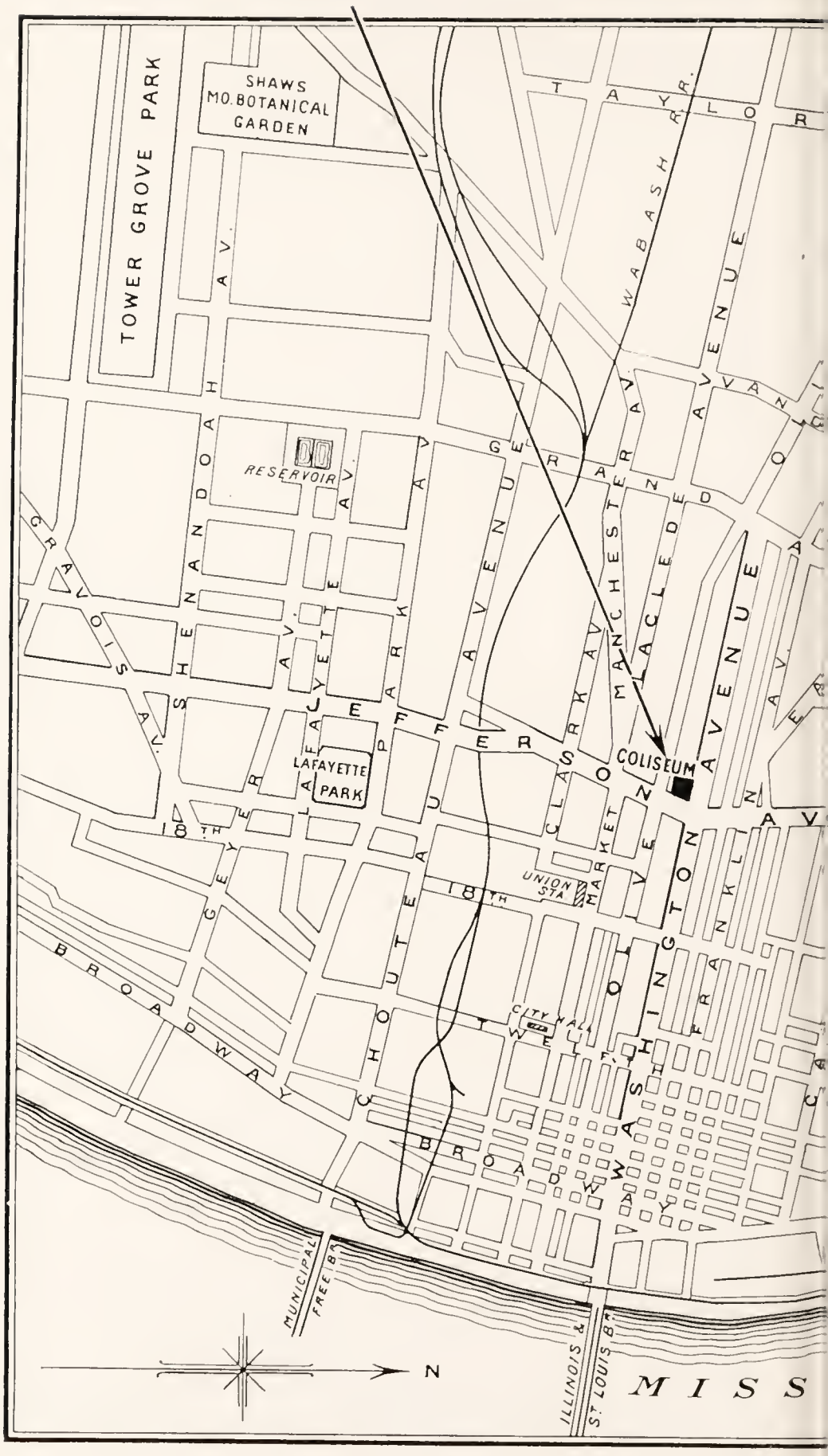
Are B. W. & Co. **Hall Marks**

They *mark* the work of
Burroughs Wellcome & Co.

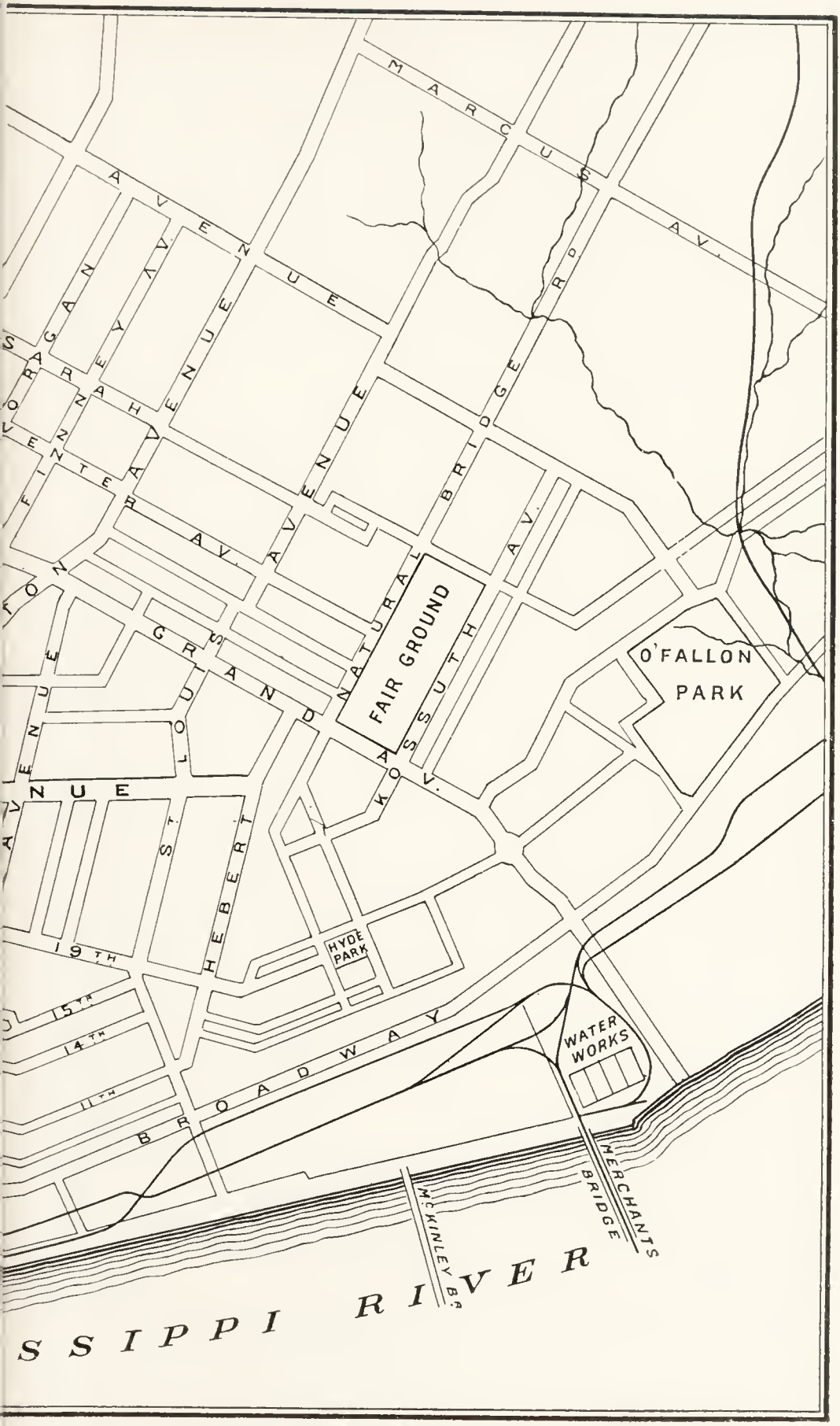
They *mean* "Issued by
Burroughs Wellcome & Co."

They *stand* for

24 CARAT products



PLAN OF ST. LOUIS



(Central Portion) in 1910